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CHILDREN'S DISEASES.

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Original Articles.

INHERITED SYPHILIS.

The Opening Address to a Discussion before The Society for the Study of Disease in Children, November the 13th, 1907.

By R. Clement Lucas, B.S., M.B.Lond., F.R.C.S.,
Consulting Surgeon to Guy's Hospital, and to the Evelina Hospital for Children; Member of the Council of the Royal College of Surgeons.

I have had the honour of opening this discussion thrust upon me by the unanimous vote of the Council as a penalty for certain criticisms I ventured to make on former discussions, to the effect that the length and learning displayed in the opening addresses, sometimes five or six in number, left neither time nor opportunity for subsequent debate.

I ventured to think the opening should be more suggestive than dogmatic, and terse rather than discursive. As a consequence I am here to represent a phrase rather than a faculty, and the burthen of presenting new ideas and new facts will rest almost entirely with those who follow.

To begin with, this discussion will open under quite different circumstances to what it would have done had it been held three or even two years ego, for it is now generally accepted that the *Spirochæta pallida* discovered by Schaudinn and Hoffmann in 1905 is the true cause of the disease, and that mercury, formerly given empirically, is a direct antidote by causing destruction of the parasite.

THE NAME.

This leads me to say a word or two on the three terms applied to this form of the disease: (1) congenital; (2) hereditary; (3) inherited. Of these three I greatly prefer the third. *Congenital,* besides being objectionable in form and suggestion, is not universally true. *Hereditary* suggests something that may be passed on indefinitely, of which there is no proof; whilst *inherited* implies only something derived from the parents which is detachable, like a fortune or misfortune, and this more correctly expresses the passing on of the spirochætæ to the offspring.

THE MICRO-ORGANISM.

The cause of syphilis, whether inherited or acquired, is the presence in the blood and tissues of the same organism, which can be demonstrated in the various secondary lesions, in the blood, and in the internal organs.

The *Spirochæta pallida* is a protozoon of spiral form from 4 to 20 μ in length (about half to three times the diameter of a blood-corpuscle), and $\frac{1}{4}$ μ in diameter, with a flagellum at either extremity. It is very motile, and its motility is of three kinds, a lashing, cork-screw, and a to-and-fro movement. It stains pale pink with Giemsa's fluid, whilst the coarser highly refracting *Spirochæta refringens* with which it is often associated stains dark purple.

THE MODE OF TRANSMISSION.

The discovery of the cause of the disease necessitates the re-arrangement of our former views as to its transmission. To those who remember the revolution in thought caused by the discovery of the tubercle bacillus—how that the long-taught diathesis gradually receded into the background, and the danger of contagion by inter-communication in houses and families grew into importance—will be prepared for some change of idea in reference to syphilis.

To my mind inheritance from the father alone is now put entirely out of court, and it follows that infection of a mother by her syphilitic fœtus can never occur. For how is it possible that a spirochæta which is highly motile, and whose length averages rather more than the diameter of a blood corpuscle can penetrate an ovum $\frac{1}{200}$th of an inch in diameter and multiply without destroying it. I lay it down as an axiom to be demolished if you will by discussion, *that inheritance is invariably through the syphilised mother.* This is supported by Colles's law that a syphilitic infant cannot cause a chancre on the nipple of its mother when suckling.

It would seem that when virulent, the spirochætes penetrate the chorion or placenta and occasion miscarriages, macerated fœtuses, or premature births; but when the virus is attenuated by time or treatment the placenta forms a complete protection to the developing fœtus, and it is the separation of the placenta at birth which allows the infection to take place through the umbilical vein. Hence the regularity of the secondary exanthematous stage from a fortnight to three months after birth. *In these cases the separation of the placenta is the first stage, and corresponds to the chancre of acquired syphilis.*

Colles's Law.

I alluded to Colles's law (which was first stated in 1837) in support of the argument that the woman was always first syphilised before the embryo or infant. The law is that a woman giving birth to a syphilitic infant cannot be inoculated with syphilis by the infant when she is suckling it—in other words, though the mother may have shown no definite signs of syphilis she is immune; whereas, the syphilitic infant put to the breast of a healthy woman may inoculate her nipple and convey syphilis to her.

Hitherto Colles's law has been used as an argument in support of the view that the mother may get a mild form of syphilis from her syphilitic fœtus, whose syphilis is supposed to be derived entirely from the father. But the law of immunity will remain equally true if it be supposed that the mother is first inoculated by the father, a large dose of the protozoon causing an obvious eruptive syphilis and a small dose a syphilis which misses the eruptive stage.

Syphilis in a man is generally admitted to be capable of transmission to a succeeding generation for a much shorter time than syphilis in a woman, and this supports the view I have stated, viz. that for transmission it is necessary that the woman be first infected.

Transmission by Milk.

The question whether the milk of a syphilitic female may infect a healthy infant at the breast has been discussed for two and a half centuries, since Ambroise Paré, in the seventeenth century, quaintly observed : "Infants suckled by syphilitic nurses are infected by them, seeing that the milk is nothing but whitened blood, which being infected by the virus the child fed with it imbibes the same qualities." Hunter, founding his argument on ineffectual attempts to inoculate the blood of a syphilitic person, came to the conclusion that not only the blood, but every secretion derived from it, such as milk, saliva, perspiration, etc., could not convey the disease. But his experiments were inconclusive and his deductions incorrect. Pellizzari succeeded in inoculating the blood of a syphilitic person, and if Voss's experiment is to be trusted, milk has been directly inoculated also.

A remarkable case bearing on this subject I showed before the Royal Medical and Chirurgical Society in 1881, and it is published in this number of the BRITISH JOURNAL OF CHILDREN'S DISEASES for reference (see page 10). A woman, aged 30 years, gave birth to a healthy child on December the 11th, which she suckled. The following Easter her husband inoculated her with syphilis, but she continued to suckle the child. She consulted me three months later when suffering from severe secondaries, squamous eruption, sore throat, condyloma, and loss of hair, but the child showed no sign of infection. The mother was then treated with small doses of mercury. She and the child were shown when the latter was ten months old. He had continued to suckle and remained plump and in perfect health, though the mother still had patches of circinate squamous syphilide on her arms. During the two years the mother remained under my care for treatment the child showed no sign of inherited syphilis. The importance of this case rests on the fact that the mother had suckled her child for three months after her infection before any treatment was commenced, so that it cannot be argued that the infant was taking the antidote in the mother's milk with the poison, and so escaped a source of possible inoculation ; but it proves that the milk of a syphilitic woman when received into the alimentary tract of an infant need not convey any infection to the child.

TRANSMISSION BY SEMEN.

It is obvious, as the greater cannot be included in the less, that a spirochæta cannot be carried in a spermatozoon, but this does not exclude the possibility of the spirochætæ being conveyed by the fluid parts of the semen.

The early experiments of inoculation by Mireur failed, but if the recent results obtained by Finger on monkeys be correct the semen of syphilitic men is inoculable. It seems almost necessary that it should be so to account for the cases of inherited syphilis conveyed after the healing of the chancre. If the presence of the spirochætæ can be with certainty demonstrated in the semen of men suffering from recent syphilis much doubt would disappear, and, in the cases where no chancre could be traced in the woman, the probability of the infection being carried through the uterus, after the disintegration of its lining membrane at any menstrual period, would be apparent.

Transmission to the Third Generation.

Another question much open to discussion is whether syphilis inherited is capable of transmission to the third generation. If the tertiary symptoms, occurring ten or twenty years after inoculation, can be proved to be due to renewed activity of the spirochætæ, in certain situations, there seems to be a fair possibility of their being carried to a third generation. But the question is beset with difficulties, since you must prove the sexual purity of two persons up to the time of maturity, and these are generally persons in whom a tendency to vice is also hereditary ; for it is known that a person the subject of inherited syphilis is not immune from re-inoculation after a certain period.

Hutchinson mentions eight cases that have come under his observations of persons who presented signs of inherited syphilis and who married, but whose offspring showed no evidence of the disease.

On the other hand, Edmond Fournier collected 116 cases, 59 of which he thought were to be relied upon as showing transmission to the third generation, and R. W. Taylor has published others.

Dr. D. M. Hutton brought a case before this Society which is published in the first volume of our 'Reports' and is there criticised by Dr. Ashby and others.

My own experience is limited to one case, but it is of unusual importance, as both parents showed most obvious signs of inherited syphilis which were unmistakable. A blind man attended a school for the blind, where he met a blind woman, for whom he developed a feeling of affection. They were both blind from interstitial corneo-iritis, and they both presented the typical physiognomy of the inherited disease—notched teeth and scars around the mouth. They married, and at the time the man came under my care their first child was about two months old. The blind wife was brought up to visit her husband, and seeing she was marked by the same disease, I sent for the infant, which presented no evidence whatever of syphilis, nor did it develop any symptom of inherited disease during the months I was able to keep it under observation. This case, in which there should have been double inheritance, showed, so long as I was able to watch it, complete immunity.

The Infant Mortality.

There is probably no disease responsible for such an enormous destruction of human life in its earliest stages as that caused by syphilitic parentage. But my experience shows that this mortality is greatest in those families where both parents have suffered from chancre syphilis and obvious secondaries. The severity of the infection and ineffective treatment, or lack of treatment, are the two factors which determine the mortality. I give two illustrations :

Case 1.—E. S— had been married eleven years, and suffered three months after marriage from rash and sore throat. The first child was stillborn twelve months after marriage, and was miscarried at the sixth month. The second child lived (the mother being at this time under treatment), but had severe snuffles and rash, is very delicate and has recurrent sores and eruptions. The third, fourth, fifth, sixth, seventh, eighth, and ninth children were all born at full time, but all died from a few minutes to within two or three months of birth. The tenth child was brought up for treatment suffering severely from snuffles, stomatitis, and coppery shiny eruption. Thus two weak children only were living out of ten.

Case 2.—R. C— three weeks after marriage suffered from sores on vulva followed by rash and sore throat, for which she had no prolonged treatment ; a pale, cachectic-looking woman. The first child, ten months after marriage, was stillborn at the seventh month. The second child was prematurely born at the eighth month and lived a day. The third child, born at full time, a fortnight later came out in large brown spots and had snuffles, and was taken to Guy's and treated by blue ointment rubbed in over the abdomen. She still lives, and at the age of eleven shows no notching of incisors or evidence of her inheritance. The fourth child did not come out in an eruption till five weeks old ; he died at six weeks.

The fifth child, a boy, came out in an eruption at five weeks and died at seven weeks. The sixth child was stillborn. The seventh child, prematurely born at the eight month with an eruption upon her, survived a day. The eighth child, a girl, had a rash soon after birth and died on the eighth day. The ninth, also a girl, was born healthy, but an eruption came out at the third week. She was treated, but died at eleven weeks. The tenth child, a fine boy at birth, came out in an eruption three weeks after birth and was brought up for treatment. He was suffering from symmetrical, squamous syphilide of legs, feet, arms and ears, little on body, ulceration of mouth and buttocks, and severe snuffles. Again two living out of ten.

THE SECONDARY STAGE.

The trite definition that syphilis is a "fever diluted by time," given by the late Dr. Moxon, is applicable to the inherited as well as to the acquired disease. I argued that the primary stage is the separation of the placenta and the infection of the infant through the umbilical vein. The secondary or exanthematous stage commences from the second week to as late as the third month. It is characterised by eruptions which may vary from slight brown macular syphilide to pompholyx, by snuffles, stomatitis, condyloma, wrinkled skin and wasting, enlargement of the spleen and liver. Then follow certain changes in the bones, in severe cases perhaps epiphysitis, giving rise to pseudo-paralysis, Parrot's nodes causing natiform skull and square forehead, cranio-tabes, and bent bones.

It cannot be too strongly insisted on that the moist eruptions and ulcerations about the mouth and anus as well as the vesicular skin affections are charged with the spirochætes and highly contagious.

From the second to the sixth year there is commonly a rest in the symptoms that are regarded as characteristic, but the tibiæ may become thickened from periostitis, or a joint may become swollen and painful and resolve under mercurial treatment.

But now the characteristic physiognomy has been gradually formed, the flattened nose, the square forehead, the radiating lines from the mouth, the stunted figure and pallid face; and then during the second dentition we look for the three signs pointed out by our great observer Jonathan Hutchinson—the notched incisor teeth, interstitial corneitis, and syphilitic deafness. Associated with such signs or occasionally independent of them, gummatous destruction of the soft or hard palate may occur, and ulcerations of the skin and cellular tissue. Destruction of the nasal bones, caries of the forehead and skull, of the long bones and dactylitis may take place as the result of the inherited disease.

Moon's Molars.

The teeth Mr. J. Hutchinson described as so characteristic of the disease are the notched and narrowed incisors, especially the central incisors of the upper jaw. This defect is brought about by arrest in development of the central columella, of which each incisor has three. But I wish to draw special attention to the characteristic change brought about by the disease in the first molars described by the late Mr. Henry Moon many years ago, since this change has recently been rediscovered both in America and on the Continent. The diagram which I show is taken from the fourth edition of 'Bryant's Surgery,' published in 1884, wherein the article on "Teeth" is written by Mr. Moon. He figures and describes the syphilitic first molar as "reduced in size and *dome*-shaped, through the dwarfing of the central tubercle of each cusp." He also contrasts these teeth with mercurial teeth and syphilitic-mercurial teeth. The change in the molar is of some clinical importance since occasionally it is characteristic when the incisors are normal.

Eyes and Ears.

The eyes may become affected at an early stage by a choroidoretinitis which may leave permament changes easily recognised by ophthalmoscopic examination, and iritis, though rare, may occur during the eruptive stage. Interstitial keratitis is most frequent between the ages of six and sixteen, but may occur much later, and rarely earlier. It is highly characteristic of the inherited disease. Like the eyes, the ears are attacked by different affections in the early and late stages. During the eruptive stage otitis media may commence as an extension from the inflammation of the nasopharynx, whilst during the second dentition a progressive deafness of labyrinthine origin may cause complete loss of hearing. Specialists in these departments will, I hope, give us some new facts relative to the syphilitic manifestations in the eyes and ears.

Inherited Syphilis Attacking the Viscera.

Much work has been done in demonstrating the disease in the various viscera, not one of which appears to be exempt, and there is probably a large field still open here for further investigation. Enlarged spleen and liver associated with rickets may be proved almost invariably to be of syphilitic origin.

The disease attacks the various organs in two forms, as a small cell infiltration usually following the course of the vessels, which in its development and decline may lead to fibrosis and consequent atrophy, and as a gummatous tumour, which is less common.

When the inherited disease attacks both testicles or both ovaries at an early age, and brings about their fibrosis and atrophy, a condition known as *infantilism* is produced at a period when the sexual characteristics should be pronounced.

The physicians present will, I hope, give us much new information on inherited syphilis of the viscera.

THE NERVOUS SYSTEM.

Much difference of opinion exists as to the frequency of nervous disease dependent on inherited syphilis. Whilst some are inclined to attribute every conceivable weakness, paralysis or mental defect to this disease, others regard the nervous lesions dependent on it as infrequent. A certain proportion of epileptics, deaf-mutes and idiots, but not a large percentage, shows signs of inherited syphilis. On the other hand, syphilitic endarteritis of cerebral vessels, gummata on nerves, and sclerosis of brain and spinal cord have been observed by competent observers.

One of the most interesting observations of late years is that some cases of hydrocephalus are dependent on inherited syphilis and are curable by mercury.

THE NEED OF CRITICISM IN DIAGNOSIS.

In conclusion, I wish to insist on the importance of weighing carefully all the evidence before determining that a particular affection is due to inherited syphilis. Every deformity from dislocated hip to cleft palate, all defects such as hernia, infantile paralysis of various kinds and even nævi have been described by various writers as dependent on inherited syphilis, and as if better to cover the anomalies the term " para-syphilis " has been invented to add to the confusion.

I need scarcely waste time in combating such crude generalisations as that " all rickets takes origin in syphilis," when any puppy taken from a litter and deprived of proper food and exercise will certainly develop this disease.

Equally crude statements have been made as to other diseases. We do not deny that persons whose constitutions have been weakened by disease are liable to produce degenerates in succeeding generations; but in future the most certain test of the disease being syphilis will be the presence of the *Spirochæta pallida* in the part affected. This organism has an extraordinary persistency, producing local symptoms after lengthened periods, but happily we have in mercury and the iodides, drugs which control its development and bring about its destruction.

Metchnikoff has recently shown that some hours after direct inoculation the application of a calomel ointment to the sore is sufficient to kill the organism and prevent the occurrence of secondary symptoms.

Gentlemen, I have now finished my sketch of this interesting disease in the second generation. It is the merest outline, that you may fill in the substance. I ask for new facts and new observations, for now that the cause of the disease is definitely known we have a fresh incentive to further investigation. There are many diseases still confused under a common name—just as gonorrhœa and syphilis, typhus and typhoid fever were confused generations ago—that time will unravel. But as we gain more exact, more precise and more definite knowledge of any one disease, we shall be better equipped for appreciating the symptoms and distinguishing the effects produced by others.

A HEALTHY CHILD SHOWING NO SIGNS OF SYPHILIS, SUCKLED BY A MOTHER INOCULATED WITH SYPHILIS SUBSEQUENT TO THE BIRTH OF HER CHILD.*

By R. Clement Lucas, B.S., M.B.Lond., F.R.C.S.Eng.
Consulting Surgeon to Guy's Hospital and to the Evelina Hospital for Children; Member of the Council of the Royal College of Surgeons.

E. H—, aged 30 years, had been married three years, and had since given birth to two healthy children. The elder, born within the first twelve months, was a strong, well-developed child, but it died of measles. The second was born on December the 11th, 1880, and had been reared at the breast. It had suffered from no illness of any kind.

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* This case was shown before the Royal Medical and Chirurgical Society in October, 1881, but did not appear in the 'Transactions.' It is republished now that it may be referred to in the discussion on "Inherited Syphilis" to be opened by Mr. Clement Lucas, on December the 13th, before The Society for the Study of Disease in Children.

During Easter week of the year 1881, the mother was inoculated by her husband with syphilis. She sought advice among my out-patients at Guy's Hospital about three months later. At that time she presented the usual secondary symptoms—condylomata, sore throat, squamous eruption, and falling off of hair. The symptoms were of a severe type, but the child, who had been suckled throughout, showed no signs of syphilitic infection. The mother's nipples were sound and well developed. I cautioned her against suckling if either nipple at any time should show signs of abrasion, but I did not think it necessary to advise weaning the child, since if ingestion of syphilitic milk were a means of communicating the virus, the infant would already have become infected.

The mother had continued under my care up to the time when shown, and had been treated with small doses of perchloride of mercury. It will be seen that there still remain large patches of circinate squamous syphilide on her arms. The infant, though it has continued to suckle during the whole of the period since its mother's infection, now six months, remains in perfect health, is well nourished, and shows no sign of syphilis.

This case is a contribution to the much disputed point whether the milk is capable of transmitting the virus of syphilis. It is a question which must be kept altogether distinct from the transmission in the act of suckling from nipple to infant-lip or from infant-lip to nipple. This latter is chancre syphilis. It rests on abundance of evidence. Transmission in this way has given rise almost to epidemics of syphilis, and the contagiousness of the secretion from the secondary ulcers on the child's lips or the sores on a woman's nipple is indisputable.

But is the milk itself inoculable? and can it convey the virus by other channels than inoculation? Of the inoculation of the mammary secretion I know of no experiments, but clinical observers of great repute have arranged themselves on different sides when discussing the transmission of the disease by milk. Ambrose Paré wrote: "Infants suckled by syphilitic nurses are infected by them, seeing that the milk is nothing but whitened blood, which being infected by the virus the child fed with it imbibes the same qualities." Hunter, founding his argument on ineffectual attempts at inoculation, denied that the blood was inoculable, and that any of the secretions formed from it were contagious. It has, however, since been conclusively proved that the blood is inoculable and will cause chancres; and Pelizzari found that he could inoculate syphilis with syphilitic blood-corpuscles, but not with serum. It is also generally accepted that the secondary secreting lesions are contagious, but a doubt still seems to hang over the normal secretions.

Lancereaux, in his work, refers to the divided opinions on the question of milk infection, and is inclined to cast doubt on all the cases recorded by the ancients as being such as not to exclude the possibility of contamination from secondary lesions of the nipple. He, however, quotes two more recent cases recorded by Melchior Robert, which were supposed to be conclusive evidence in favour of milk infection. Two healthy babes were put to suckle syphilitic nurses, and both acquired syphilis without there being any sores on the nipples of the nurses and without the occurrence of chancre on any part of the children's bodies. Lancereaux doubts the correctness of these records also. Lancereaux also says there is something to be desired more than is given in Cullerier's records on the other side, of five nurslings who did not become infected, though their nurses were syphilitic, inasmuch as it was not clear that the infants were not syphilised. M. Ricord's observations are, perhaps, scarcely to be trusted in this matter, sincs he denied the inoculation of a nurse by a syphilitic child. He says, however: "Nurses clearly affected with secondary disease have been able to suckle infants which were sent as having syphilis (but who only had some simple eruption—eczema, etc.), and never were these children, whilst under my inspection, infected."

M. Dugès has related the case of a woman affected with tubercular syphilide, who suckled for nearly five months, at the same time that she was under treatment with protoiodide of mercury, a child which presented no trace of syphilitic lesion. Commenting on this, Lancereaux says: "This case is not perfectly conclusive, and moreover, it stands alone."

My case is one almost exactly similar, except that the doubt cast on Dugès's case by M. Diday does not apply, viz. that the infant took the antidote with the syphilis, for *in my case the child had suckled three months after the inoculation of the mother before any treatment was commenced.*

The conclusion to be drawn from my case is that the milk of a syphilised person does not infect the suckling when that milk is being transmitted through the alimentary tract. If the poison is actually contained in the milk it would appear to be not transfusible through mucous membrane, since though it might be destroyed by the gastric juice, it is scarcely likely that any secretion in the mouth, even if in sufficient quantity, would be energetic enough to cause its disintegration or destruction.

ON ERUPTIONS OF THE NAPKIN REGION IN INFANTS; WITH ESPECIAL REFERENCE TO THE DIAGNOSIS OF THE ERUPTIONS OF CONGENITAL SYPHILIS FROM CERTAIN NON-SPECIFIC NAPKIN-AREA ERUPTIONS OF COMMON OCCURRENCE.

By H. G. Adamson, M.D.Lond., M.R.C.P.,

Physician to the Skin Department at Paddington Green Children's Hospital;
Chief Assistant in the Skin Department at St. Bartholomew's Hospital, etc.

The importance of the careful study of the skin eruptions which occur in the napkin region of infants is not sufficiently appreciated. As a consequence of want of knowledge of these eruptions it is a common error to mistake many forms of non-specific eruption for those of congenital syphilis. The seriousness of such mistakes is obvious—not only is the infant put under a long and unnecessary course of mercurial treatment, but it is a grave matter that the parents should from henceforth be regarded as syphilitics. Non-familiarity with these eruptions may also lead to the mistaking of a syphilitic eruption for a non-specific eruption, with the result that the infant is not properly treated at an early stage, and later suffers from the more harmful effects of the specific virus. But errors in this direction are less common, for the tendency is rather to regard any sort of eruption about the buttocks and genitals of an infant as being probably of syphilitic nature.

If we turn to the text-books we get really very little definite information in this matter of the diagnosis of congenital syphilitic eruptions. We are told to carefully distinguish them from intertrigos and from eczemas, and as a means of distinction we are generally given the very misleading piece of advice that, while the non-specific eruptions are limited to the flexures and to parts covered by the napkin, syphilitic eruptions occur also upon parts beyond the napkin region. Now, as a matter of fact eczema does not occur upon the buttocks of an infant—its characteristic seat is the face and scalp; while intertrigo is a loosely used term which may cover any sort of abrasion or moist lesion in the flexures, either non-specific or syphilitic.

There are, however, several distinct and characteristic forms of eruption of common occurrence which may be, and which often are, confused with those of congenital syphilis; and it is essential not only to distinguish these eruptions from the syphilitic eruptions, but also, for their proper treatment, to recognise them individually.

In one group of these eruptions the lesions are due probably to local irritation, combined with a gastro-intestinal toxæmia. In others they owe their origin to local microbic infection. Broadly, they may be divided into the following groups:

(1) Simple infantile erythemas (*Dermites simples infantiles* of Jacquet).

(2) Streptococcic impetigos.

(3) Seborrhœic dermatitis.

Surface Anatomy of the Napkin Region.

Before proceeding to the study of these eruptions it will be of advantage to take note of certain features in the superficial anatomy of these regions.

(1) The *napkin-region* in an infant may be said to include not only the *lower abdomen, the buttocks, the genitals,* and the *thighs,* but also other parts which come into contact with the napkin from outside when the infant is in the flexed position, namely, the *calves* and the *heels.*

(2) The area covered by the napkin comprises a number of prominent convex surfaces, separated by more or less deep sulci. These prominent convex surfaces are: In front: (*a*) the lower part of the abdomen; (*b*) the genitals and perineum (both parts more prominent in an infant than in an adult, and, moreover, subjected to pressure and friction from the fold of napkin which is brought forward between the thighs); (*c*) and (*d*) the upper and lower halves of the thigh, separated by a deep fissure which is present only in babies. The prominent convex surface behind are (*a*) the buttocks, (*b*) the scrotum in the male, (*c*) the thighs, (*d*) the calves, and (*e*) the heels.

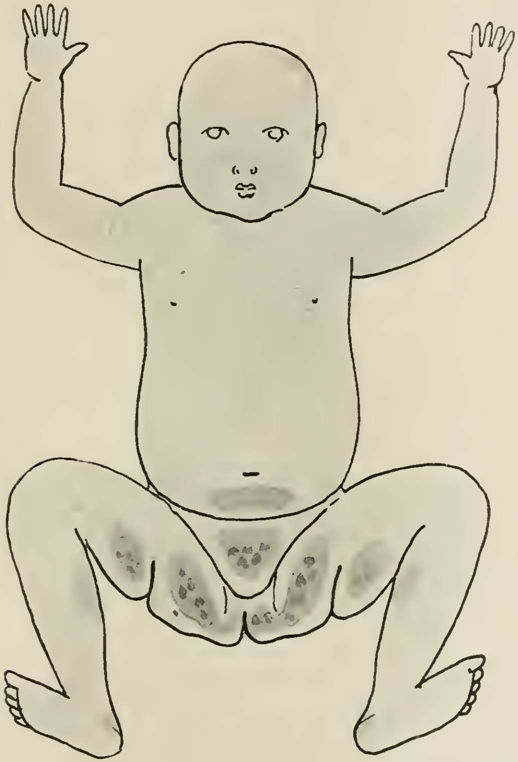
(3) The convex surfaces are subjected to friction and pressure from the napkin; the flexures or sulci between them are protected from friction, but afford warm, moist areas for the growth of micro-organisms.

I. Simple Erythemas of the Napkin Region (Dermites simples infantiles of Jacquet).

There are certain eruptions of common occurrence about the buttocks, genitals, and thighs of infants which have been studied and described by many of the great clinical masters of the past, including Trousseau, Henoch, and Parrot, but which have only within more recent years been thoroughly defined and clearly differentiated from the eruptions of congenital syphilis by the work of Jacquet in Paris and by other French observers stimulated by his writings.*

These eruptions consist primarily and essentially in an erythema occupying the prominent convex surfaces of the napkin region, together with modified forms, erosions, pseudo papules, and ulcerations, the result of secondary changes.

Fig. 1.



Jacquet has grouped these eruptions as follows:—

(*a*) Simple erythemas.
(*b*) Erythemato-vesicular or erosive.
(*c*) Papular or post-erosive.
(*d*) Ulcerative.

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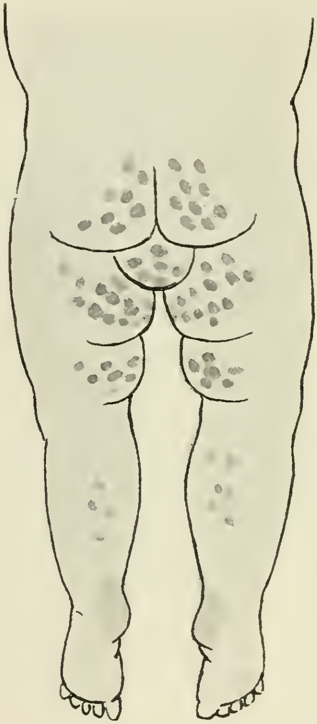
* Lucien Jacquet, 'Traité des Maladies de l'Enfance,' Grancher et Comby, t. iv, p. 714, 1905.

It will be more convenient to describe these forms separately, although it must be understood that they are actually stages of one process and that they may overlap or co-exist in the same patient.

(*a*) *Simple erythemas.*—These are characterised by an erythema occupying the prominent convex surfaces of the buttocks, of the thighs, of the scrotum or vulva, and extending sometimes on to the lumbar region, the lower abdomen, and the calves and heels. In some cases even the back and shoulders, where they form points of pressure as the child lies on its back, may be affected. In very mild cases only the genitals, the inner sides of the thighs, and the perineum, may be the seats of the erythematous patches.

Fig. 2.



The erythema forms usually an uniformly shining red surface upon the convex areas, leaving free in marked contrast the flexures and sulci between. Sometimes there may be here and there excoriations, and some scaling or crusting in parts.

This type is seen mostly in very young infants (Fig. 1).

(*b*) *Erythemato-vesicular or erosive forms.*—In these there is a basis of erythema as in the first type, but in addition, towards the centre of the convex areas there are small bright red disc-like erosions in groups of two or three up to a dozen or more. The erosions may coalesce and so form polycyclical areas. Generally on close examination of the margins of the erythematous areas there may be found small, flat, more or less perfect vesicles, which represent apparently the early stage of the erosion.

This type of eruption was minutely and accurately described by Parrot. It and the succeeding type are commonly seen in babies of a few months old (Fig. 1).

(*c*) *Erythemato-papular or post-erosive.*—This form was also carefully described by Parrot, who, however, wrongly regarded it as a syphilide (lenticular syphilide).

Jacquet has demonstrated that it is really a later stage of the last form in which the erosions have thrown up flattened granulations, giving the lesions the appearance of papules.

This eruption occurs like the preceding type over the prominent parts of the convex surfaces. The lesions consist of flat, bright red or dull red papules (or pseudo-papules) arranged in groups, which may or may not be set upon an erythematous base. These groups of pseudo-papules are seen upon the buttocks, the upper half of the thigh, the lower half, the calf, and on the genitals. They are never found in the flexures or sulci dividing the convex areas. They may be associated with erythema of the heels and of the lower abdomen (Fig. 2).

(*d*) *Ulcerating forms.*—These are less common than the preceding, although not altogether rare in hospital practice. In these cases the erosions, instead of granulating, become still further advanced, so that ulcers are formed. The ulcers are punched out, sharply margined, circular or oval, or more often running together to form vermicular or polycyclical lesions. They usually occupy the scrotum and neighbouring parts of the buttocks and thighs, being confined always to the convex areas and avoiding the sulci and flexures. In some instances the ulcerations have exposed muscle or bone (Fig. 3).

Ætiology and pathology.—The distribution of these eruptions upon the prominent convex surfaces suggests very strongly that they are due to local irritation by wet or soiled napkins, though there is almost certainly another factor which renders them susceptible, namely, some form of gastro-intestinal toxæmia. It is not unusual to find these eruptions associated with Lichen urticatus upon other parts, an eruption which is also probably dependent upon disturbance of the digestive functions. Many of these infants are ill-nourished, but this is not always the case.

Diagnosis.—The diagnosis of these eruptions *from those of congenital syphilis* generally demands a good deal of care. The erosive, the post-erosive, and the ulcerating forms are especially liable to be mistaken for syphilis. The features which distinguish them may be summarised as follows:

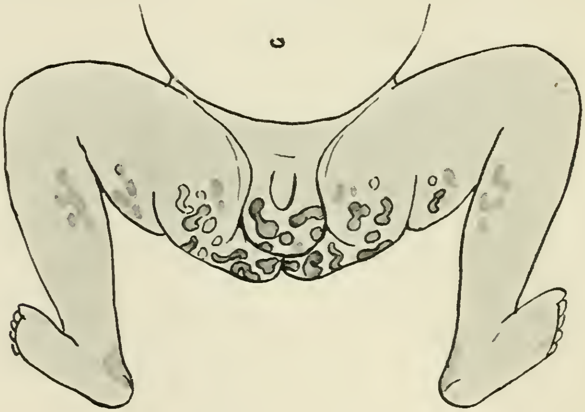
(1) The "simple erythemas" are limited in a most striking manner to the convex parts of the buttocks, thighs and genitals, and, in extensive cases, of the lower abdomen, calves and heels.

(2) Lesions are absent from the face and from the palms and soles.

(3) They have not the characteristic coppery colour of syphilitic eruptions.

(4) Snuffles, fissures of the lips, hoarse cry, opacity of the skin, all signs of congenital syphilis, are absent.

Fig. 3.



(5) The course of the eruption is uneven; it does not gradually advance as does a syphilitic eruption, but it varies from day to day, and it disappears on removal of the conditions of local irritation and regulation of the digestive functions, and without mercurial treatment.

II. Seborrhœic Dermatitis.

There is another distinct and characteristic eruption of the napkin region which is far from uncommon, but which has not been described hitherto as particularly affecting the napkin region of infants in the way that I shall presently detail. This eruption is often mistaken for congenital syphilis.

One may call it "seborrhœic dermatitis" because of the resemblance of its clinical characters to the eruptions which Unna has named "Eczema seborrhœicum." It is to be regarded as distinctly a parasitic (micrococcic) dermatitis, and not as an eczema nor as a seborrhœa. Its characters are as follows: The eruption occupies the whole area covered by the napkin. It forms a uniform bright red sheet, with a granular looking surface from the presence of small moist or greasy yellowish scales. The margins of the area are very sharply defined. In the actual flexures the surface of the eruption may be distinctly moist or oozing. Beyond the margins of the main area there are small pin-head-sized, red, scaly papules, sometimes here and there running together into small patches.

But the eruption is not confined to the napkin region. Other sulci and flexures are involved; as behind the knees, around the umbilicus, in the axillæ, on the neck, behind the ears, and in the labio-nasal sulci. Moreover, the scalp is invariably the seat of a red scaly eruption at the vertex, either as one large patch or in smaller patches (Fig. 4).

Yet another point of importance is that the mother is always the subject of more or less marked "seborrhœa capitis."

The eruption is seen always in well-nourished and apparently otherwise healthy babies with clear complexion. It is very readily removed in a few days or weeks by the application of a mild sulphur ointment, or of some other simple parasiticide such as boracic acid ointment.

Ætiology.—It seems probable that in these cases the baby is infected from the scalp of the mother, and the characters of the eruption and its behaviour under treatment strongly suggest a microbic origin—possibly, as Sabouraud believes for seborrhœa capitis, the *Staphylococcus epidermidis albus.*

Diagnosis.—The features enumerated easily distinguish the eruption *from that of syphilis* and from simple erythema of infants. Some points to be especially noted in differentiating it *from syphilis* are: (1) The healthy clear complexion; (2) the bright red colour and granular surface of the patches; (3) the outlying scale-topped papules (the primary lesions); (4) the particular involvement of the flexures.

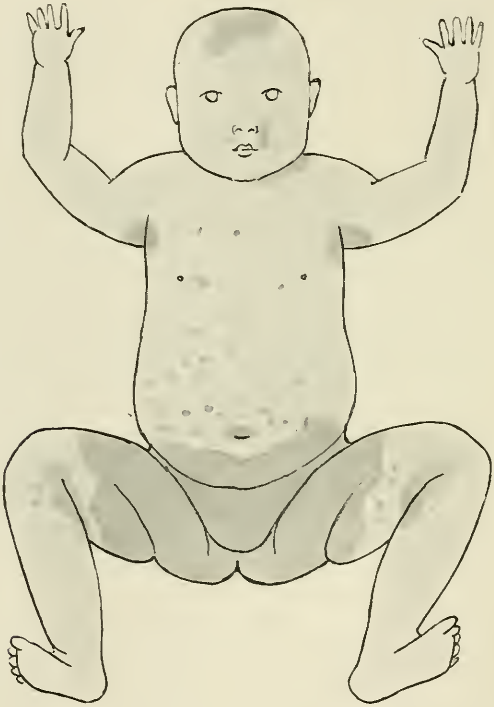
From erythema of infants it is distinguished by its situation in the flexures, the large areas with sharp margin covering flexures and prominences alike, and its occurrence on the scalp, face, axilla, etc.

From impetigo the diagnosis is not always easy, nor, on the other hand, important; but the granular surface, the scaly papules, and the absence of phlyctenules and crusts help to distinguish it.

III. Streptococcic Impetigo about the Napkin Region.

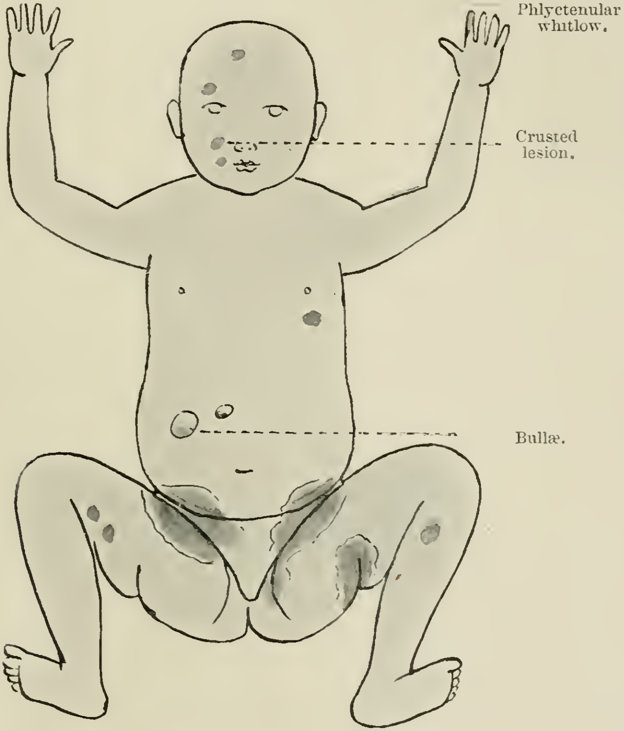
Impetigo contagiosa (phlyctenular or streptococcic impetigo) is prone in young infants to form lesions which retain their phlyctenular character instead of drying up rapidly into the amber crusts so characteristic of the affection in older children. It tends also to attack, not mainly the face, as in older children, but covered parts as well, and especially the napkin-covered areas and the flexures; and in these parts the lesions form excoriated areas (often of large extent) by the mechanical rubbing off of the roof of the phlyctenule. The most severe form of this phlyctenular impetigo is that seen in new-born babies as the result of infection at birth, and known as pemphigus neonatorum. In these cases the eruption is often particularly abundant about the napkin region and flexures, where it may form large raw red areas, but with margins showing the remains of the bullæ.

Fig. 4.



In older infants suffering from impetigo contagiosa there is the same tendency of the eruption to attack the napkin region, sometimes in the form of a large red raw area with phlyctenular margins, in other cases limited to the groins and the mid-thigh sulcus (one form of so-called "intertrigo"). The nature of these excoriated areas is revealed by the phlyctenular margin, and by the presence elsewhere of bullous lesions, and of the more typical amber-crusted lesions of impetigo contagiosa. Often there is a phlyctenular whitlow around a nail on a finger or toe. And other children in the same family may be afflicted with impetigo (Fig. 5).

Fig. 5.



Diagnosis.—(*a*) In new-born babies the simple streptococcic bullous impetigo or pemphigus neonatorum must be distinguished *from the bullous syphilide* which is seen (though rarely) at this period. The impetiginous eruption appears a few days after birth; it may often be traced to infection from the nurse or mother; the child is usually well-nourished, the bullæ are tense. In the syphilitic eruption the palms and soles are especially involved; the bullæ are ill-formed, and often merely raw surfaces covered with brownish shrivelled epidermis, and intermixed with copper-coloured macules. The infant is born with the eruption, and is always much wasted.

(*b*) In infants of a few weeks to a few months old the eruption of impetigo about the buttocks may be *confused with those of syphilis.* The points of distinction are: the absence of coppery tint; the phlyctenular margins; the presence of amber-crusted lesions elsewhere; the involvement of the flexures especially, and particularly the area behind the ears; and the absence of copper-coloured macules on the palms and soles or elsewhere.

Vacciniform eruption about the genitals and thighs in infants.—Here must be mentioned a rare form of eruption, probably of impetiginous (streptococcic) nature, which is seen about the genitals in infants. Primarily the lesions are not very large (pea-sized to finger-nail sized) tense bullæ, few in number, and situated about the genitals and perineum. The bullæ quickly rupture, and excoriated discs or sharply-margined circular ulcers are formed which, unless one is familiar with the eruption, are sure to be mistaken for syphilitic sores. But the children show no other signs of syphilis, the lesions are without infiltration and there are no coppery macules. The result of local treatment proves that they are merely local infections. [For an account of these cases, with a series of excellent drawings, see a paper by Dr. T. Colcott Fox in the 'British Journal of Dermatology,' vol. xix, June, 1907, p. 191].

IV. The Eruptions of Congenital Syphilis.

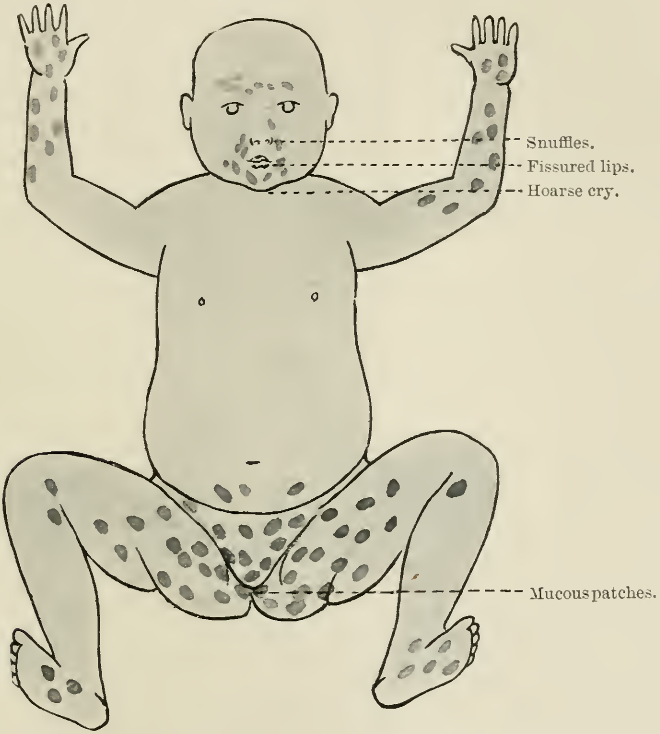
In exceptional cases syphilitic infants are born with a bullous eruption, the so-called "syphilitic pemphigus," and these infants nearly always die. In the large majority of cases, however, the symptoms of syphilis do not appear until the child is from four to eight weeks old. Until that time they may be well nourished and apparently healthy. Then there may appear certain characteristic symptoms: snuffles, hoarse cry, fissured lips and eruptions on the skin. The skin eruptions have certain favourite sites, namely, around the mouth and nose, upon the palms and soles, and particularly about the genitals and buttocks and thighs, *i. e.* in the napkin region.

By far the most common type of skin eruption is that in the form of disc-like patches of coppery red tint. These patches may be erythematous and leaving only a brownish stain after pressure; or there may be some degree of cell-infiltration, so that a maculo-papule results; or the papule may become scaly. Very rarely there are ill-formed vesicles or pustules upon some of the patches.

It is characteristic of these disc-like lesions that they tend to be uniform in size and to attack all parts, flexures and prominences alike. They are generally most abundant over the buttocks, thighs, perineum, genitals, and lower abdomen, less abundant upon the trunk, and more marked again upon the palms and soles and about the nose and mouth (Fig. 6).

Those lesions which occur about the anus, or in moist flexures, or at the angles of the mouth, often become excoriated and sodden, producing mucous patches or shallow ulcers.

Fig. 6.



On the thighs and buttocks and around the mouth the disc-like lesions may often run together into large unbroken areas; but always at the margin and on other parts there are to be found isolated macules or papulo-macules.

In my own experience ulcerated lesions upon the skin—apart from those which may occur in moist areas—are very rare indeed, and most of the ulcerating eruptions in infants which I have seen diagnosed as congenital syphilis have in my opinion been of non-specific nature, either impetiginous or the ulcerative stage of simple erythemas.

Diagnosis.—The diagnosis of the eruptions of congenital syphilis from other napkin-area eruptions has already been referred to, and it will be sufficient here to summarise the characters of the specific eruptions:

(1) Appearance of eruption at about the age of four weeks to eight weeks.

(2) Eruption consisting of disc-like coppery-red macules, maculo-papules, scaly papules, or, rarely, bullous or crusted.

(3) Eruptions situated about the genitals, buttocks, thighs, and often around the mouth, and on the palms and soles, and invading flexures and convex surfaces alike.

(4) Other signs of syphilis: the child begins to lose its plump and healthy appearance, the skin becoming opaque and muddy looking; snuffles, hoarse cry, fissures of the lips, iritis (rarely), enlarged testicle (rarely). The "syphilitic wig" and "old man appearance" are not characteristic signs of syphilis, but may be seen in any condition of malnutrition.

The Society for the Study of Disease in Children.

A SPECIAL meeting of The Society was held on Friday, December the 13th, 1907, at 11, Chandos Street, W., for the purpose of a discussion on "Inherited Syphilis," Dr. GEORGE E. SHUTTLEWORTH in the chair.

The discussion was opened by Mr. R. Clement Lucas, and the following gentlemen took part: Mr. George Pernet, Dr. Adamson (introduced), Mr. Sydney Stephenson, Dr. Leonard Guthrie, Dr. G. A. Sutherland, Dr. G. E. Shuttleworth, and Dr. George Carpenter. Mr. A. H. Tubby's communication was read by the Secretary in his absence. As the reading of the papers communicated by the above gentlemen occupied the whole of the time of the meeting, and as there was no discussion, and, further, as they will appear in the pages of the JOURNAL, an abstract of the proceedings will not be published.

Editorial.

MEDICAL INSPECTION OF CHILDREN IN PUBLIC ELEMENTARY SCHOOLS.

January the 1st, 1908, will in the future be considered a red-letter day for the poor English child—its Magna Charta of Health.

Its physical welfare has now become an affair of State, and from this time forth all children entering the public elementary schools will be medically examined.

The task set the medical examiners will not be arduous to begin with until the machinery is in thorough working order.

During the present year it is proposed to inspect the children newly admitted and those leaving the school.

During next year the inspection will include those in their third year of school life, about the seventh year of age. Subsequently it is intended that examinations shall include the newly admitted, those in the third year and those in the sixth year, the tenth year of age, and a further inspection of the child is to be made when leaving school.

Further, the Act schemes for the amelioration of the evils revealed by medical inspection, including in centres where it appears desirable the establishment of school surgeries or clinics, such as exist in some cities of Europe for further medical examination or the specialised treatment of ringworm, dental caries, or diseases of the eye, the ear, or the skin.

If by this it is intended to start and equip at the public expense special hospitals for the treatment of children's ailments by medical officers of health and others, then we take the greatest possible exception to this plan on the following and on other grounds, which we will specify later on.

All the large cities and towns of any importance in this country are already admirably supplied with institutions whose business it is, and has been for years, to gratuitously treat sick children.

While others slept or treated their efforts with indifference to improve the national physique, the children's hospitals performed good work.

The majority of these institutions are equipped with the latest medical appliances.

But what is more important than all is the fact that all the medical experience in the country in relation to the care and treatment of sick children is centred in these hospitals. For the public to be required to start rival institutions is neither necessary nor advisable.

Nor is it expedient that the public should lose the services of the children's specialists attached to these hospitals.

The children's hospitals, and the medical experts attached to them, on the other hand, must not adopt a stand-off attitude in this great movement, but they must come forward and assist the authorities in an undertaking which should have been originated by them.

The Board of Education makes it quite clear that this important work should be supervised by the medical officer of health of the local authority, which appoints the education committee, and when the work is obviously more than can be undertaken unaided it should be entrusted to one or more medical officers working under his supervision.

The Board also instruct that in making such appointments preference shall be given to those (1) who have adequate training in state medicine or hold a diploma in public health; (2) have had some definite experience of school hygiene; (3) have enjoyed special opportunities for the study of diseases of children.

All these recommendations are excellent, although we should have placed a knowledge of children's diseases first, as without it the examinations must degenerate into a mere farce.

But we would ask where are the medical officers of health who have enjoyed special opportunities for the study of children's diseases?

Next we would ask how many medical schools are there in Great Britain which give systematic teaching in children's diseases?

What examinations do the young medical men in this country undergo in children's diseases before obtaining their legal licences to practise their profession on the public?

Now, all these matters intimately concern the public, and the public have a right to know.

In reply to these important questions we regret to say that there is practically no systematic teaching on this subject in nearly all those medical institutions which make a business of educating the student to become a medical man.

If there is one thing on the face of this earth that is more important to the human race than another it is the medical study of the child.

What the medical schools have done in the interests of the child we have just related, and the self-same medical attitude in Great Britain is shown towards the important subject of pediatrics in the year 1908—the year of the child's Magna Charta of health.

True we have our children's hospitals—and very admirable institutions they are for the relief of the sick poor, none better—but they do not attract the medical student to their storehouses of clinical wealth. Why? Because there are no medical examinations in children's diseases, and the young medical man knows as much about a sick baby as he does about a rattle-snake, and cares less.

And yet it is to such as these who have had no experience and no special training that this important work is to be entrusted.

The Society for the Study of Disease in Children has during the past seven years shown what can be accomplished in this special branch of practice in this country, and what an amount of good work can be done by those who are trained to, and enthusiastic in, this special order of research work.

Although this large Society has a well-deserved European reputation, is academically and financially most successful, and is well known to every medical man throughout the length and breadth of the land who reads the medical journals, yet the medical officers of health who enjoy its membership can be counted on the fingers of the hands!

This demonstrates the keen desire on the part of medical officers of health to make themselves *au courant* with children's diseases.

But we can remember the time when the announcement of this virile Society's collapse would have been greeted with shouts of glee in the higher walks of medical life.

Admirable as are the suggestions of the Board of Education that the medical examinations of the children should take account of numerous medical ailments which they particularise, yet on reading the list we cannot but feel that the clinical physician has not had a paramount voice in these matters, otherwise we should not find there that no reference is made to the kidneys and the examination of the urine, that stammering is linked with snoring and mouth-breathing, and that diseases of the skin and lymph-glands are classed together.

Nor do such anomalies as the sequence of chorea, ruptures, and spinal disease appeal to the expert.

The Board of Education propose, however, to issue at an early date an examination form suitable to this inspection, and it is to be hoped that when this appears it will be of a thoroughly practical nature.

When one reads through these requirements one feels that very great professional experience and attainments are required, such as no ordinary family practitioner possesses.

It comprises a knowledge of diseases of the throat and nose, the ear, the eye, the skin, the teeth, nervous diseases, orthopædics, and, finally, "anæmia," the diagnosis of the numerous causes of the latter demanding considerable clinical knowledge and microscopical skill.

And we, with a considerable amount of clinical experience in such matters, would most humbly submit to the Board of Education that no such examinations as they outline in their memorandum could possibly be duly accomplished so as not to occupy "more than a few minutes."

It is quite clear that the future medical officer of health will be required to be examined in, and to obtain a diploma in, children's diseases as well as in public health.

These criticisms, however, are advanced in no hostile spirit; we have the very greatest sympathy with the movement, and we welcome its advent.

But we feel that the Board of Education will be well advised if it gets in touch with The Society for the Study of Disease in Children and avails itself of its hoards of accumulated medical knowledge on a very special subject, viz. "the study of children's ailments and the advancement of knowledge in respect thereto."

In the public interest this should be done. If a thing is worth doing it should be done well.

Abstracts from Current Literature.

Medicine.

A case of "diphtheria of the skin" treated by antitoxin ('*Lancet,*' *January* 4, 1908).—**Alan B. Slater** describes the case of a girl, aged 13 years, who had previously suffered from a vaginal discharge with white patches on the labia. Before these appeared the child had been under treatment for inflammation of the eyes. Blisters began to develop round the vulva, and spread on to the abdomen, chest, neck, head, and even the face. Later she was treated for syphilis by means of mercury and iodides for about two years without much effect, although the child's general condition improved, but the vesicles were still confined to the vulva, chest, neck, and head, the face being specially affected. When she came under Dr. Slater's treatment there were masses of vesicles round the left side of the mouth extending to the cheek, but not into the mouth: others on both eyebrows, the right being worse than the left. They were also present behind the ears and on the scalp. The neck and shoulders were also covered with them. The region of the vulva was erythematous and studded with vesicles. The general condition of the child was good; she was well nourished. There was no sign of constitutional disturbance. The spleen was not enlarged, the heart was normal, and the urine did not contain albumin. A bacteriological examination of some of the serous fluid obtained from the face showed organisms resembling the diphtheria bacillus. Further investigations revealed diphtheria as the true cause of the lesions. Treatment by anti-diphtheritic serum resulted in a marked improvement taking place in the lesions. Dr. Slater remarks that the primary seat of infection in this case was doubtless the eyes. JAMES BURNET (Edinburgh).

Constitutional development and social progress of boys and girls from infancy ('*Lancet,*' *December* 28, 1907).—**Francis Warner** states that clinical experience shows that a large proportion of so-called "delicate children" are really more or less defective in development, the number of boys being larger than that of girls, but the latter being of lower vitality. Congenital defectiveness is more common among boys than girls. It would seem that defectiveness in development predisposes to disease in both boys and girls, but that such girls have less power of resistance to disease than the boys in similar conditions. As regards children of school age, we find that children with any degree of subnormal development are more frequent among boys, but girls of this type tend to acquire brain disorderliness, ill-health, and mental dulness in larger proportion than boys of the same status. The greater survival of girls in infancy is in part due to the fact that there is a smaller proportion with defective development. Much more knowledge is needed as to the causation of the large proportion of children born with some degree of subnormal development. Finally the writer suggests that an investigation should be made by means of statistical evidence showing for a series of years and for various districts the relations of "congenital defect and premature birth" to male and female mortality at successive ages.

JAMES BURNET (Edinburgh).

The cuti-reaction to tuberculin in infants ('*Presse Médicale,*' *September*, 1907, *No.* 78, *p.* 617).—**Ferraud** and **J. Lemaire** publish the results of their investigations on 100 children, with histological drawings. Ninety-eight per cent. of the subjects were under fifteen years of age. The histological characteristics were distinct: a dermic œdema, often considerable, and an inflammatory reaction consisting of small round cells. It is clinically and anatomically markedly different from what is observed after simple scarification, scarification with glycerine, phenolised or sublimated glycerine, vaccine and diphtheria toxine. It is clinically and anatomically the same in pronounced tuberculous patients and in those apparently free from it. This uniformity of aspect is explainable by the presence, in the subjects who were supposed to be non-tuberculous, of a tuberculosis not discoverable by ordinary means. The results were in twenty-nine out of forty-nine cases confirmed by the ophthalmo-reaction, and in thirty-four out of thirty-nine cases by the subcutaneous injection of tuberculin. This parallelism between the results obtained by the injection of tuberculin and by the cuti-reaction is remarkable and deserves close study. When positive this reaction reveals in a unique manner the tuberculosis of the subject. When negative it acquires, on the other hand, a significance of application more immediate. Being much more practicable than subcutaneous injection, it may be substituted for it.

VINCENT DICKINSON.

Ataxia following measles ('*Arch. of Pediat.*,' *p.* 770, 1907).—**Fairbanks.**—A boy, aged 4½ years, had a severe attack of measles followed a fortnight later by an attack of prolonged screaming and apparent loss of consciousness. For the next six months he was unable to walk steadily, and the right hand showed some inco-ordination and intention tremor. Speech was unaffected. Romberg's sign was well marked. The right knee-jerk was more active than the left, and Babinski's sign was present. Gradual improvement occurred, but there was still considerable inco-ordination in the right upper extremity when the child was last seen.

J. D. ROLLESTON.

Intubation in whooping-cough ('*Arch. of Pediat.*,' *p.* 696, 1907).—**Johnson.**—A boy, aged 18 months, suffered from whooping-cough with severe laryngeal spasms, followed by general convulsions. Sedatives were ineffectual, and artificial respiration had to be performed on several occasions. Intubation was finally adopted, and the tube was left in three days. No further spasms of any kind occurred, and the child made a good recovery.

J. D. ROLLESTON.

Colicystitis and its complications (colimeningitis) in infants ('*Prager Med. Wochens.*,' *September* 26, 1907).—**Moll**, in reporting two cases of colicystitis, remarks that this is the commonest form of cystitis in children. Quite infrequently is the cystitis due to infection by other organisms, such as *Bacillus lactis ærogenes*, staphylococci, streptococci, gonococci, diphtheria or tubercle bacilli. Colicystitis is rather frequent in infants, and for this reason alone a more frequent examination of the urine than is usual should be practised. The early symptoms of the attack—restlessness, pallor, cries of pain, slight thirst—should suffice, in infants, to lead to an examination of the urine. The fresh urine in colicystitis is cloudy, acid or neutral (rarely alkaline), and contains albumin up to 0·1 per cent. One can often get a pure culture of *B. coli*. Cystitis must be distinguished from bacilluria due to the advent of bacteria in fresh urines or as a secondary symptom in general infections. There are three chief views now prevalent as to the origin of cystitis in children: (1) Escherich's view, supported by the attack incidence among girls being much higher, that bacteria penetrate the bladder from without *viâ* the urethra. (2) Hæmatogenous origin *via* the kidneys to the bladder, there setting up an inflammatory process. But blood examinations in colicystitis have nearly always been negative. (3) Intestinal origin, the *B. coli* gaining access to the bladder direct from the intestines. This, however, presupposes some lesion of the intestinal mucous membrane, since experiments have shown that *B. coli* cannot penetrate the normal intestinal mucous membrane. Colicystitis is usually associated with some intestinal disease. Pfaundler has shown that in this cystitis agglutination takes place in a dilution of 1 : 30, which proves that the *B. coli* is here the cause of the disease. The first case was that of a sudden attack of a severe colicystitis in a six weeks old male child, who had hitherto been quite well and had been thriving on breast-feeding. There had been no digestive troubles. Colimeningitis ensued, resulting in death. The absence of any intestinal lesion was proved post mortem. One circumstance should be mentioned. The wards were overcrowded at the time and there were both among the wet-nurses and the infants numerous suppurating cases (phlegmonous anginas, whitlows, periostitis, etc.). In this case the onset was sudden, and towards the end of a week, when the cystitis was improving, the meningeal symptoms first appeared. Pure cultures of *B. coli* were made from fluid obtained by lumbar puncture; the bacilli were, during life, shown to be intra-cellular. The second case was that of young healthy breast-child, who, on the fourteenth day, was attacked by a swelling of the prepuce and balanitis. Injections of water previously boiled were made twice daily into the preputial sac, and compresses were applied. Colicystitis ensued, probably caused by the passage of bacilli to the bladder in the daily injections that were required. The attack was severe. Urotropin 0·05 three times daily was given with excellent results. Bacilli were still found in the urine some time after the child was apparently quite recovered and was increasing in weight.

M. D. Eder.

A case of idiosyncrasy to cow's milk ('*Berliner klin. Wochens.*,' *November* 11, 1907, *No.* 45, *s.* 1467).— **Freund** showed an infant, aged 7 months, at a meeting of the Silesian Medical Society, in whom the administration of cow's milk, or any of the constituents of cow's milk, in even the smallest quantities, gave rise to symptoms of poisoning (sickness, high fever, rapid loss of weight, mucous stools, and collapse), which quickly disappeared on a return to exclusive breast-feeding. He considered reasonable the explanation of Moro and Schlossmann, who attribute the reaction to the intolerance of certain sucklings to cow's milk albumin. On the other hand, he thought the more recent researches of Finkelstein, who connects it with the appearance of "alimentary fever," supported the view that the whey of cow's milk can bring about a lesion of the epithelial lining of the intestine, on which the nutritive materials of cow's milk, as also those of human milk, can produce poisonous effects. Freund pointed out that in his case the administration to the child of cow's milk, from which the whey had been removed twice, produced the toxic symptoms, so that the effect of whey cannot altogether explain the phenomena.

J. E. Bullock.

Pathology.

The channels of entrance of tuberculosis (‘*Presse Médicale,*’ *October,* 1907, *p.* 644).—**Calmette,** at the Sixth Conference on Tuberculosis at Vienna last September, after criticising the experiments of Küss and Findel on aerial communication, summed up the results of his own work as follows: (1) The contagion of tuberculosis cannot be experimentally effected through the respiratory track except with the greatest difficulty, by making animals inhale tuberculous products or cultures in the state of fine spray. The inhalation of dry powders also only exceptionally succeeds in effecting contagion. It must therefore be admitted that dust contaminated with dry bacilli does not play any important part in natural infection. (2) The ingestion of virulent tuberculous products or of cultures in the state of a fluid emulsion is constantly effectual in producing tuberculosis in all kinds of susceptible animals. The bacilli can then be absorbed through the intestinal mucous membrane without producing any lesion by their passage; they are carried by the chyle to the mesenteric glands. Thence they are frequently carried by phagocytic leucocytes into the lymph current of the thoracic duct and thence distributed in the blood stream. The pulmonary capillaries are most prone to become the seat of the first tubercular lesions, hence the extreme frequency of pulmonary tuberculosis in relation to other localisations of hematic origin. (3) The evolution of the tuberculous infection is all the more rapid and serious as the number of virulent elements absorbed by the ingestion is greater, and as the absorptions are repeated at shorter intervals. (4) Closed tuberculous lesions resulting from a single infection are capable of cure. This cure confers a true immunity against fresh infections through the digestive track. The duration of this immunity is not yet ascertained. (5) Parasitic heredity of tuberculosis is extremely rare. It always results from an infection *in utero,* and cannot be considered a factor of any importance in the contagion of tubercle. (6) The idea of *tuberculisable soil* or *heredo-predisposition* must be abandoned, since experiment shows that tuberculous infection is always possible in susceptible animals, and that it is in direct relation either to the number of virulent elements absorbed or to the frequency of contamination. In relation to some of Calmette's conclusions it is interesting to reproduce a summary of **George Carpenter's** observations under the heading of "Tuberculous Peritonitis: Pathology and Morbid Anatomy," at the Special Meeting for the discussion of Tuberculous Peritonitis by The Society for the Study of Disease in Children (‘*Reports of The Society for the Study of Disease in Children,*’ *vol.* III, 1902–1903, *p.* 109). *Summary.*—(1) Tuberculous disease originates in some children in the intestines or abdominal lymph glands. Either of these structures, and less commonly the latter, or both in combination may be involved. These lesions are mostly associated with peritonitis. (2) Cases that are strictly confined to the intestines, the mesenteric glands and the peritoneum are comparatively rare; to the peritoneum alone, or combined with tuberculous inflammation of the serous membranes rarer still. (3) Implication of other organs in fatal cases of primary abdominal tuberculosis is not uncommon, and of all organs and structures the lungs appear to be most likely to be attacked. Invasion of the lungs in such cases probably occurs *via* the thoracic duct and pulmonary artery, the lungs acting as a filter. This is contrary to the experience of others who consider that food tuberculosis may get well or spread but never leads to tuberculosis of the lungs. (4) Primary abdominal tuberculosis is sometimes associated with tuberculosis of other parts which are free from external entrances, *e.g.* the brain, the meninges, the pericardium, the pleura, the choroid, etc. (5) The majority of cases of ulcerating tuberculosis of the lungs contract tuberculous intestinal ulcers, tuberculous lymph nodes or a combination of the two conditions. This mode of onset of abdominal tuberculosis is more common than the other. It is not so frequently associated with peritonitis. The clinical symptoms in such cases are either pulmonary or perhaps cerebral, and not often abdominal. VINCENT DICKINSON.

Streptococcic enteritis and its complications (*'Berliner klin. Wochens.,' No.* 46: *'Jahrb. f. Kinderheilk.,'* 65, 15, *Supplement*).—**L. Sehle,** from numerous observations, comes to the following conclusions: Streptococcic enteritis is very frequent amongst nurslings, both in epidemics and in sporadic cases. It is most common in hot weather, but occasionally occurs in winter. It is characterised clinically by the occurrence of severe toxic symptoms, which are frequently fatal from collapse. In the stools of such patients streptococci are found in large numbers, and usually in the form of diplococci. Post mortem, the bacteria are found especially in the small intestine, but also in parts of the large intestines. Streptococci are found in the bladder, from which they set up irritation in the kidneys; they may disappear in a short time, but in many cases they set up a severe nephritis which may last a long time. In the course of the nephritis, œdema may arise, but severe uræmic symptoms never occur; the nephritis often takes the form of a pyelitis. In occasional instances, in the further course of the disease, the symptoms of cystitis arise. In many cases a diffuse peritonitis occurs, without any coarse lesion in the intestinal wall. In the severe, fatal forms, streptococci are usually found in the blood. As an ætiological factor, milk, which in many cases contains streptococci in large numbers, has much to do with streptococcic enteritis. J. E. BULLOCK.

The fœtal circulation through the heart (*'Johns Hopkins Hosp. Bull.,' October*, 1907).—**Pohlmann** criticises the three chief theories of the circulation through the heart in the fœtus. They are: (1) Sabatier's theory that the blood-currents in the right auricle cross one another, that from the inferior vena cava being directed towards the foramen ovale, while that from the superior cava is discharged into the right ventricle. This is described as being physically impossible, morphologically inaccurate, and developmentally unnecessary. (2) Wolff's theory that the stream from the superior vena cava enters the right ventricle, and that from the inferior is evenly divided between the two ventricles. (3) Harvey's theory that the blood from the two venæ cavæ becomes mixed in the right auricle and is then distributed to both ventricles. This theory the author believes to be correct, and is most in accord with his own investigations. Experimentally, he found that both ventricles received the same amount of blood, and that the inferior vena cava returned an equal amount to each. This agrees with both Wolff's and Harvey's views, but the fact that the blood from the superior cava was found evenly distributed in the outflow from both ventricles decided his opinion that the latter was correct. T. R. WHIPHAM.

Therapeutics.

The treatment of hæmophilia (*'Med. Press,' November* 6, 1907).—**Carrière** read a paper on this subject at the Congrès de Médecine. The patient should be ordered, if possible, a change of climate, either to the seaside or to the mountains, to renovate the blood, and at the same time a *régime* of good feeding should be instituted. Iron or arsenic is useful to improve the anæmia, but neither has any direct action on the hæmophilia itself. For this chloride of calcium, gelatine, and serotherapy constitute the most favourable treatment. Chloride of calcium may be given in gr. xv doses four times a day to an adult, and continued for some time. Gelatine is less satisfactory. Serotherapy has been recently recommended by Weill. One ounce of horse's serum may be injected every ten or fifteen days. When an operation, such as the removal of adenoids or the tonsils, or the extraction of a tooth, is necessary in a patient suspected of hæmophilia, the coagulation time of the blood should be examined, and the patient submitted to a preparatory treatment several days beforehand. Injections of an ounce of animal serum should be given every day, enemata of half an ounce of gelatine three times a day, and a mixture containing one to two drachms of calcium chloride. In the case of hæmorrhage after operation, the usual local methods of arresting it should be employed.

T. R. Whipham.

Surgery.

A series of four cases of infantile gangrene of the cornea in which the Treponema pallidum was found ('*Lancet*,' *December* 28, 1907).—**Sydney Stephenson** points out that although the *Treponema pallidum* has been found in almost every part of the body, yet specific ailments of the eye appear to form almost an exception to the rule. The paucity of reports, however, is more apparent than real. He then goes on to record four cases of keratomalacia in which the *Treponema pallidum* was present. This is a grave affection of the cornea which is apt to come on in infants whose vital resistance has been seriously reduced by such general illnesses as congenital syphilis, tuberculosis, or ileo-colitis. In London it has a distinct seasonal incidence. In all of his cases there were present certain evidences of congenital syphilis. The ages of the patients varied from seven weeks to nine months. Stephenson points out that spirochætæ have been found in the tissues of seemingly unaffected eyes by various observers, including himself, and it is doubtful whether or not the spirochætæ described by him in this article would have been found in the cornea of the patients apart from the existence of keratomalacia. James Burnet (Edinburgh).

The modern treatment of cleft palate ('*Lancet*,' *January* 4, 1908.)—**W. Arbuthnot Lane** in this paper describes his method of operating on cases of cleft palate. He maintains that in early infancy it is possible to provide a well vascularised thick flap which is practically three times as broad as can be obtained when the teeth have begun to encroach materially on the mucous membrane or to perforate it, since the muco-periosteum covering the under and the outer surface of the alveolus can be made to form the outer two thirds of the flap. The general principle underlying the various operations which he performs for cleft palate is to close in the interval between the edges of the cleft by muco-periosteum in the case of the hard palate and by mucous membrane and submucous tissue in the case of the soft palate. If hare-lip is present as well then the cleft or clefts in it are closed at the same time as the cleft in the palate. The author gives his reasons for this procedure. The operation is very fully illustrated by means of a number of excellent diagrams. James Burnet (Edinburgh).

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Original Articles.

SOME EXPERIENCES AND OBSERVATIONS ON CONGENITAL SYPHILIS IN INFANTS.*

By George Carpenter, M.D.(Lond.),

Chairman of Council of The Society for the Study of Disease in Children; Membre Correspondant de la Société de Pédiatrie de Paris.

The subject which has been selected for discussion to-night presents diagnostic problems of interest to the clinician, for although in many instances the nature of the complaint we are called upon to treat is only too obvious, there are other cases where the diagnosis is neither easy nor certain.

It is with these latter examples occurring in infants that I propose to deal along with other matters in regard to congenital lues which have attracted my attention from time to time.

Chronic "Snuffles."

The clinical significance of chronic "snuffles" in certain of its phases is not devoid of interest. The infant suffering from chronic "snuffles" with a muco-purulent discharge bubbling from its anterior nares is recognised by all, but I don't think it is sufficiently understood that there may also be chronic "snuffles" localised to the posterior parts of the nasal cavities and to the naso-pharynx, attended by a considerable muco-purulent discharge which finds its way into the infant's stomach by the posterior nares, and which, by reason of its situation, is likely to escape notice.

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* Read before The Society for the Study of Disease in Children, December the 13th, 1907.

I have elsewhere remarked on this, and Paul Gastou[*] has confirmed these observations, and he has also called attention to the dangers of streptococcal infection from that source. He attributes the common causes of death, viz. broncho-pneumonia, diarrhœa and vomiting, and marasmus, to the direct transference of streptococci and to the absorption of their toxines, and also, in some instances, to the invasion of the blood-stream by these and other germs.

These and others of the complications that Gastou assigns to streptococci can, in the light of modern discovery, be as well, if not better, explained by the action of the specific germs. But as a contributory cause of death streptococcal infection cannot be overlooked.

The recognition of the concealed variety of "snuffles" is not only important for diagnostic purposes, but its presence must not be overlooked for therapeutic reasons. The local treatment of chronic "snuffles" by nasal applications is most necessary. Infants with blocked nostrils cannot take sufficient nourishment or properly inflate their lungs, and the dangers of sepsis from the nose and naso-pharynx are by no means to be ignored.

Cranio-tabes.

I propose next to offer a few observations on cranio-tabes and Parrot's nodes. There are certain inaccurate statements in regard to one of these conditions which still appear in the text-books, although it is many years now since I first drew attention to the inaccuracy of that doctrine.[†] I refer to the situation of the lesions of the former and to the time of their occurrence. On these points—situation and time—there should be no disagreements, whatever views may be held in regard to causation.

The common situation for cranio-tabes is behind the parietal eminences, and in 95 per cent. of the cranio-tabic cases the parietal bones are attacked. In 60 per cent. the parietal bones are solely involved, and in less than 3 per cent. the occipital bones. Other cranial bones are occasionally involved, but I have never seen the frontal bone alone affected.

Another point of interest is that cranio-tabes is most often found in the second and third months of life, and that after six months of age the decrease in the number of the cases is most striking. In other words, in what may be termed the *syphilitic age* cranio-tabes is quite a common occurrence, while in the *rickety age*, that is, from the ninth month of life onwards, the reverse is the case.

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[*] 'Revue d'Hygiène et de Médecine Infantiles,' tome 3, No. 3, 1904.

[†] "Cranio-tabes in Young Children: A Clinical Inquiry into its Origin, Illustrated by 100 Cases," 'St. Thomas's Hospital Reports,' 1889.

There are certain observations the truth of which cannot be denied, viz. that cranio-tabes is found in syphilitic fœtuses, and that it occurs in syphilitic infants.

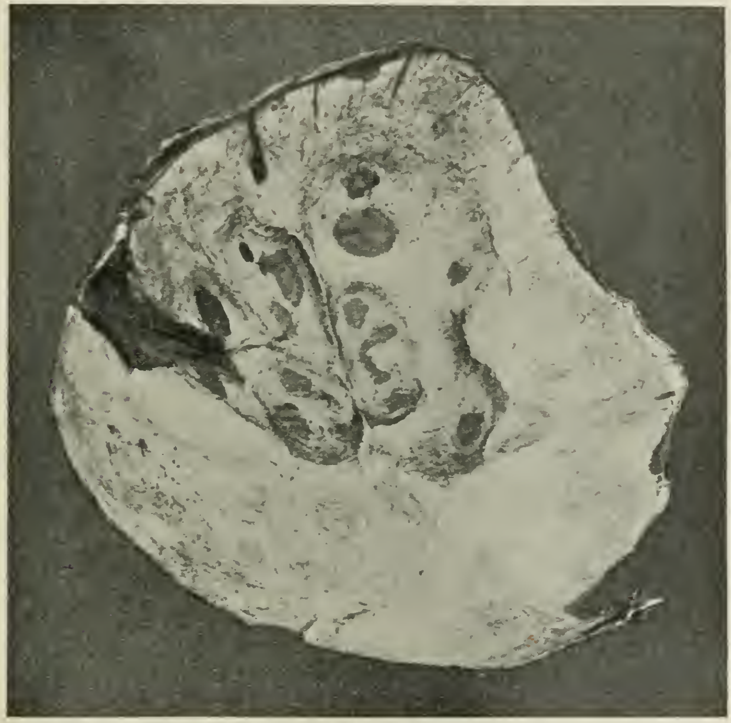

Fig. 1.—Cranio-tabes of left parietal bone. In many places the bone has disappeared, leaving a membranous covering only. Note the atrophied areas on the inner table showing as pits and depressions in the bone. (Photo. by Dr. A. W. Harvey.)

I have found the condition as an isolated lesion in cases where I have known one or other parent to be syphilitic; as an isolated lesion where I have attended a brother or a sister immediately preceding the patient for syphilis; also in association with marked anæmia which rapidly responded to mercurial treatment; and also associated with chronic "snuffles"—quite a common combination.

There are other points about cranio-tabes in relation to this question of syphilis that I think ought to be emphasised. Some cases recover quickly under mercurial administration, but others less readily, and in others this treatment is of no value.

I have no doubt that cranio-tabes is produced by syphilis during the *syphilitic age,* and that it is just as much a symptom of the complaint as an enlarged liver and a swollen spleen, and that, like these manifestations, it is not pathognomonic. In quite a number of cases examined by the usual clinical methods there is not a suspicion of syphilis, and it remains to be proved whether any or all of these cases will be found to be of a syphilitic nature by future bacteriological and cytological investigations. We have been brought to a standstill at this point, and we need the additional information which such examinations would afford to settle the question.

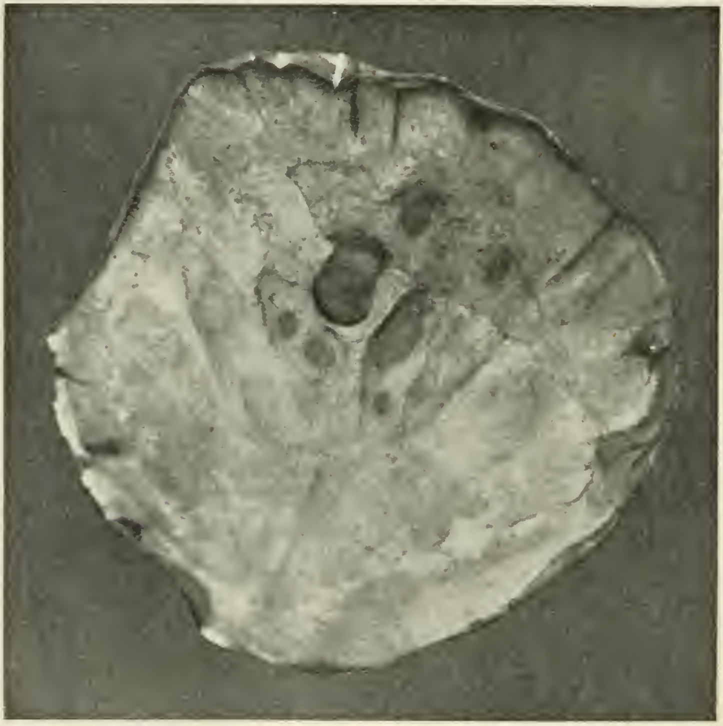

Fig. 2.—Cranio-tabes of right parietal bone. In several places the bone has disappeared, leaving a membranous covering only. Note the atrophied areas on the inner table showing as pits and depressions in the bone. (Photo. by Dr. A. W. Harvey.)

The next point for consideration is that the more rickety the infant the less likely is it to be cranio-tabic. Cranio-tabes does occur in the *rickety age*, there is no doubt about that also, but it happens infrequently. Rickets, on the other hand, is a very common malady indeed.

But although syphilis is a disorder which is at its height during the first six months of life, it is by no means wiped out in the succeeding six months and obvious sporadic cases of congenital syphilis are met with in the *rickety age.*

There is sufficient objective evidence, therefore, to satisfy the critic that syphilis is still in operation although its recognised manifestations are apt to be infrequently seen.

In some infants cranio-tabes disappears and rickets persists or even increases. Further, I have seen cranio-tabes recover and give place to Parrot's nodes.*

Since Elsässer first described the condition in 1843 and attributed it to rickets and since Parrot challenged the rachitic explanation there has been a see-saw of opinions, some believing in its rickety origin, others in its syphilitic, while others, again, pinned their faith on the combined explanation.

But I have no confidence in its rachitic origin for the reasons I have just advanced.

Whenever I find cranio-tabes in an infant I *suspect* syphilis, but I must admit that my suspicions are not always verified by the test of mercurial treatment. Indeed, some of the infants recover without mercurial treatment. But the above suspicion is a good working hypothesis.

Parrot's Nodes.

Unlike cranio-tabes Parrot's nodes is met with in the *rickety age,* not the syphilitic.

It occurs when the evidence that can be obtained of syphilis is of the weakest possible kind.

Another point about it is that when it does happen it usually arises in rickety children.

The associated rickets may be of all grades, from a condition of body which cannot be claimed to be free from rickets to one where that disorder is very pronounced. But I have detected it in non-rickety subjects.

Cranio-tabes is not often found with Parrot's nodes, but I have met with this association three times in forty cases.

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* "A Case of Scurvy in a Cranio-tabic Infant, with Observations on Cranio-tabes,' 'Reports of The Society for the Study of Disease in Children,' vol. iii, pp. 214–222.

What I consider to be a striking fact in regard to Parrot's nodes is that although, as I have already pointed out, syphilitic evidence is usually wanting by reason of its time incidence, nevertheless no less than 57·5 per cent. of my cases were undoubtedly syphilitic.*

There is also another fact which I believe I was the first to note, and to which I should like once more to call attention, and that is that splenomegaly is a frequent accompaniment. Half of my cases of Parrot's nodes were associated with enlargement of the spleen.

There is one other observation already published by me elsewhere, and that is that one of these patients was the child of a woman suffering from congenital syphilis. It is the only example I have met with of possible transmission to the third generation.

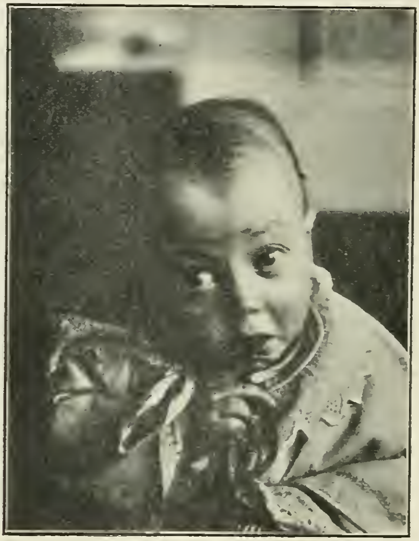

FIG. 3.—The "hot cross bun" variety of Parrot's nodes.

In my opinion Parrot's nodes is a syphilitic manifestation and not a rickety disorder. It is allied to the periostitis which occurs in the long bones of infantile syphilitics, and which may either be found in association with epiphysitis (osteo-chondritis) or without that condition. I have met with typical Parrot's nodes in children suffering from periostitis of the long bones.†

The usual situation for cranial osteophytes is in the neighbourhood of the anterior fontanelle. When in front of it the characteristic buffer-like bossing of the frontal bones is produced (Fig. 3). If combined with bossing of the parietal bones behind the anterior fontanelle there results the hot-cross-bun skull with its cross over the suture lines (Fig. 3). But no part of the skull is exempt. In its earliest and least characteristic stages sharply circumscribed osteophytes, ranging from a pin's head to a half-crown or more in circumference, may be scattered over the vertex. The characteristic lesions and the small disseminated nodes may occur together. In its later manifestations characteristic formations are apt to flatten down, leaving the cranial vault thickened, an object of suspicion perhaps, nothing more.

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* 'Syphilis of Children,' p. 73.

† *Loc. cit.*, p. 74; 'Reports of The Society for the Study of Disease in Children,' vol. iv, 1904, p. 159.

SYPHILIS AS A RICKETS PRODUCER.

Before leaving this question of syphilis and rickets I should like to say that I have no examples in my case-books of cases of pronounced rickets arising in syphilitic children in the *first six months of life*, nor can I remember to have seen such.

I have seen rickets develop in syphilitic children that have been fed on the *breast alone*, and, therefore, occurring in infants in whom there was *primâ facie* evidence that rickets had been produced by the syphilitic virus only.

But against this assumption is the undoubted fact that rickets does occur in non-syphilitic breast-fed children where lactation has been unduly prolonged.

Cases of beaded ribs I have seen in non-syphilitic infants, but beaded ribs are not special to the syphilitic. Besides, beaded ribs occur in infants at birth, and the older I become the less impressed am I by slight enlargements of the costo-chondral junctions. If every infant who displays a ridge at the costo-chondral junctions is to be considered to be possessed of an incipient rickety rosary, and is to be viewed as an early example of rickets, then a non-rickety infant is a great rarity.

I have hitherto looked upon syphilis as a producer of rickets, but I cannot persuade myself that I have had any sound clinical justification for doing so. Syphilitic infants, like other children, are apt to become rickety if improperly fed, but it does not strike me that they are more liable to rickets than the non-syphilitic or sick children in general.

But it is always well to hear the other side, and the very latest pronouncement on these debatable questions is by Marfan.* He thinks it would be a mistake to deny syphilis any share in the ætiology of rickets. He holds that syphilis is by itself sufficient to produce rickets, and is not merely a predisposing cause as Fournier thinks. The peculiar characters of syphilitic rickets are—(1) its early appearance; it is either congenital or starts in the first three or four months of life; (2) it is remarkable for its cranial lesions, especially cranio-tabes and the natiform skull, which are both much commoner in syphilitic rickets than in rickets due to other causes; (3) marked anæmia; (4) chronic hypertrophy of the spleen, which, in two thirds of the cases, is due to hereditary syphilis. Rickets due to alimentary disturbance hardly ever shows itself before the sixth month, is not well marked before the second year, affects the limbs more than the skull, and is often associated with digestive troubles and a big belly. Anæmia is less marked, and hypertrophy of the spleen is infinitely less frequent than in syphilitic rickets.

Syphilitic Epiphysitis.

In only one case, and that in a syphilitic infant, aged 2 or 3 months, have I seen a pronounced enlargement of the costo-chondral junctions, and it is more than likely that that was osteo-chondritis, and not rickets.

If there be no periosteal extension up the shafts of the bones syphilitic epiphysitis is much like a rickety enlargement.

Sometimes the collar of enlargement between the epiphysis and the diaphysis does not extend all round the bone end. Then there is no doubt about the diagnosis, and there is no doubt if there be a condition of pseudo-paralysis; and there is also no doubt about the diagnosis when the epiphysis and the diaphysis part company, as sometimes happens.

The bulk of the cases of epiphysitis that I have met with have occurred during the first three months of life, but I have seen examples in the *rickety age*.

Thus in one child, aged 17 months—the oldest I have seen—both elbows were involved.

In a child of seven months both knees and elbows were attacked, and there were tibial nodes also, and in another of the same age both knees were affected.

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* "Rickets and Syphilis," 'Semaine Med.,' October the 2nd, 1907, p. 469.

It has not been unusual* in my experience to find multiple epiphysitis as the sole manifestation of hereditary syphilis. Of 41 epiphyses involved there were 15 elbows, 11 wrists, 10 knees, 3 shoulders, and 2 ankles. In one case there was myositis, the neighbouring affected muscles being hard and painful to touch. Chapin and Henoch also have recorded similar experiences. But any lesions of the muscles have been in my practice very uncommon, and I can only call to mind once having seen gummata which were in the amputated thigh muscles of a syphilitic child.

Syphilitic Splenomegaly.

The spleen is commonly enlarged in syphilitic fœtuses, and of all organs next to the liver it is the most prone to suffer in intra-uterine life. Indeed, according to many writers it is the organ most usually involved in extra- as well as intra-uterine life.

Referring for the moment to splenic enlargements in general in infancy and early childhood, there are two periods of that life when it is most usual to find splenic enlargements, viz. during the first six months and from the first to the third year, or a little longer. Between the sixth and the twelfth month there is a lull in splenic excitability. It is during the first three years of childhood that the finding of an enlargement of the spleen may be looked upon as nothing out of the way, but after that age splenomegaly is uncommon, and becomes increasingly so as the child gains in years.

This age comprises two phases of child-life, viz. what I have termed the *syphilitic age* during the first six months, and the *rickety age* from, say, the first to the third year.† Many cases occurring during the first six months of life are unquestionably syphilitic. Various estimates have been made of the frequency of enlargements of the spleen in this disorder. Thus splenomegaly occurred in 40 per cent. of my cases, but other observers give far higher‡ figures, viz. 62 per cent., with nineteen probabilities in addition according to one of them. These discrepancies are doubtless due to the conceptions formed by individual observers as to what may be regarded as evidence of syphilis.

During the *syphilitic age* rickets is practically non-existent, and therefore any influence it may be supposed to exert can be neglected. But although there is no rickets to confuse the issue, there are doubtless poisons, other than the syphilitic, to account for splenic enlargements.

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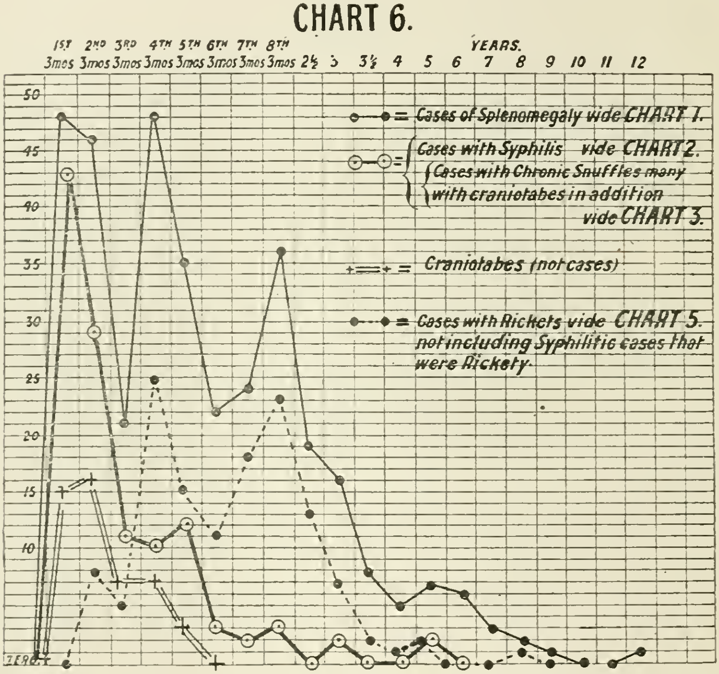
* "A Case of Syphilitic Epiphysitis," 'Reports of The Society for the Study of Disease in Children,' vol. i, p. 16; 'Syphilis of Children,' p. 66.

† "On Splenomegaly in Infants and Young Children," 'Reports of The Society for the Study of Disease in Children,' vol. iii, pp. 296–320.

‡ 'Syphilis of Children,' p. 50.

During the *rickety age* splenomegaly is met with once again in increasing frequency. It is during this period of life that obvious syphilitic disorders are much less in evidence, and that splenic enlargements can then with less show of reason be attributed to syphilis. But some of these cases are without question syphilitic.

Fig. 4.



Illustrating Dr. George Carpenter's paper on "Splenomegaly," 'Reports of The Society for the Study of Disease in Children,' vol. iii, 1903, pp. 296-317.

In regard to rickets, it is questionable in my mind whether splenic enlargements arising at this age in rickety children are due to rickets. My own conviction is that splenomegaly in this complaint is an epiphenomenon.*

I also hold that in the rickety age also there are other agencies besides syphilis and rickets to account for splenic enlargements at this period of life of which we at present have no knowledge. It is daily brought prominently to our notice that the spleen is very sensitive and readily responds to a variety of *known* infections; thus tubercle, enteric, pneumonia, whooping-cough, and so on will all bring about swelling of that organ, and there must be other *unknown* infections with like spleen-swelling propensities, and this must be the case if only for the reason that the *known* infections are not sufficient to account for all the cases of splenomegaly that arise in infancy and early childhood.

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* *Loc. cit.*, p. 306.

But what in this matter is of real interest to the clinical physician is, what interpretation is to be placed on the doubtful case? What is then the significance of splenomegaly? For instance, the common association of splenomegaly with Parrot's nodes. I certainly view the enlarged spleen in these cases as syphilitic. But there are other associations with splenomegaly, thus, cranio-tabes and chronic "snuffles." Sometimes it is with one symptom, sometimes with the other, sometimes with both of them. If these symptoms occur with anæmia, as sometimes does happen, and if the anæmia and the cranio-tabes respond to the mercurial test, then there can be no question as to the significance of the enlarged spleen. But the, to us, unexpected perhaps happens, the treatment is disappointing, and we are left wondering whether the test of trial by mercury is, after all, competent to decide the question.

How are we in the present state of knowledge to interpret the following clinical riddles, and what bearing, if any, have they on the disease in question? The onset of splenomegaly in already rickety and anæmic children; the onset of splenomegaly in children who have been rickety but who have recovered; diminution in the size of the spleen while the children become more rickety. What is the explanation of such phenomena as the following? Twin sisters with splenomegaly. One, aged 14 months, died of pronounced anæmia (hæmoglobin 18 per cent., colour index ·33, red corpuscles 55 per cent., marked alterations in them, white ratio 1 to 172). The other developed Parrot's nodes, and became decidedly rickety, but was then not anæmic though she had been (hæmoglobin 42 per cent., colour index ·6, red corpuscles 68 per cent.). In another set of twin infant sisters in whom there was evidence neither of rickets nor of syphilis, in one the spleen was enormously enlarged, while in the other it was quite natural.

Soon we may be in a position to solve some of these clinical problems, and perhaps in the doing may expand as well as recast our present ideas of syphilitic disorders. The *Treponema pallidum* * has now been demonstrated in the blood and in all the organs and tissues of the body. Observations are being made on the cerebro-spinal fluid of congenital syphilitics. Jobler † has found characteristic changes there, and we are in hopes of fresh and important developments along these lines of research. But until we are placed in possession of some such aids to diagnosis, the syphilitic origin of some splenic enlargements, as also other doubtful symptoms, must be mainly conjectural. In the meantime no harm will be done when an enlarged spleen is discovered by being suspicious of syphilis, and that, I think, should be the attitude of mind in regard to these and

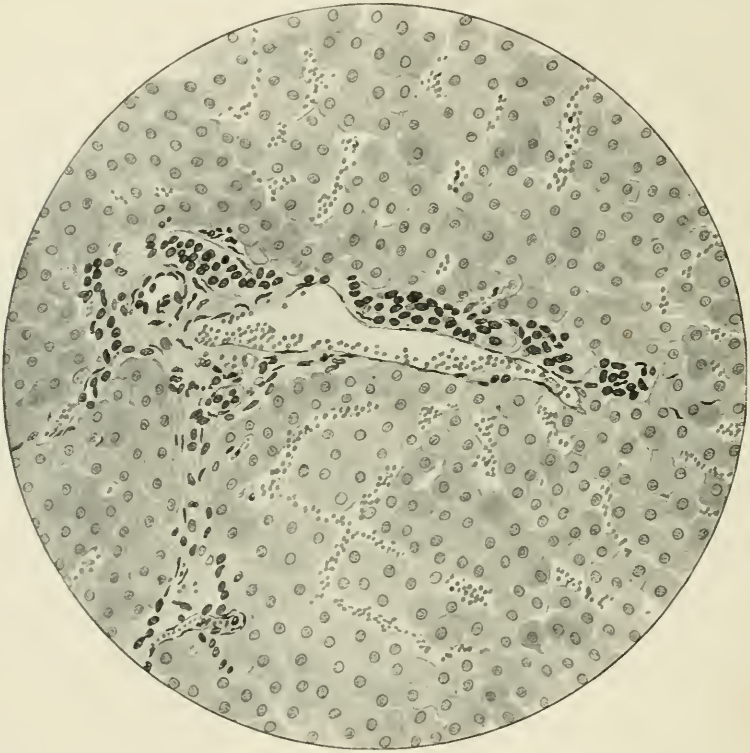

Fig. 5.—Section of liver showing slight leucocytal infiltration of the portal canals. The capillaries contain a quantity of red blood-corpuscles. Leitz oc. 1; obj. 7.

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* 'Atlas der Ätiologischen und Experimentellen Syphilisfossihung.' Von Erich Hoffmann, Berlin, 1908, 34 plates (30 coloured and 4 photo-micrographs).

† "Lymphocytes of the Cerebro-spinal Fluid in Congenital Syphilis and its Diagnostic Significance," 'Jahrbuch f. Kinderheilkunde,' 64, i, 1.

other doubtful cases. A suspicious attitude of mind should make the clinical examination of the child more thorough, not less searching.

Syphilitic Enlargement of the Liver.

Not only are splenic enlargements common during the syphilitic age, but enlargements of the liver follow them fairly closely, if anything being a trifle in excess in my experience.

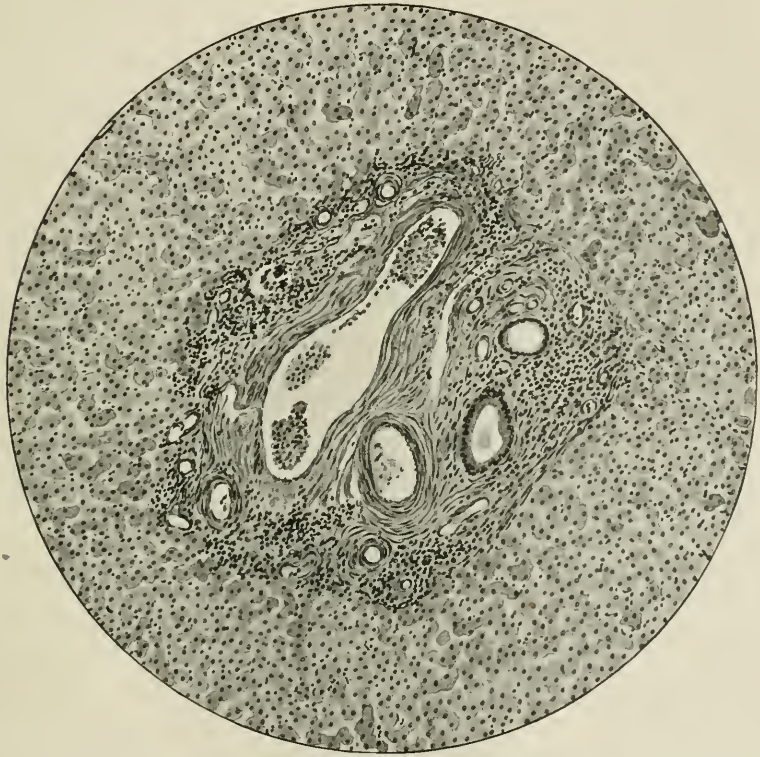

Fig. 6.—Section of liver showing infiltration of a portal canal with leucocytes and invasion of the peripheral liver-cells by leucocytal infiltration. Note that the capillaries of the liver contain large numbers of leucocytes. *Vide* "Syphilitic Nephritis in Infants" (continuation of present article). Specimen taken from same case as Fig. 9. Leitz oc. 5; obj. 4.

And what has been said about the spleen in regard to congenital syphilis applies equally forcibly to the liver.

Although it is a common enough occurrence to find enlargement of the liver in syphilitic infants clinically, yet the detection of any pronounced alterations therein by palpation during life or the finding of naked-eye pathological changes after death is not usual.

Sometimes, clinically, the liver feels hard, but ascites or jaundice * are most uncommon.

Diffuse cellular infiltration (interstitial hepatitis), similar to the infiltrations occurring in other organs, and first described by Gubler, is the common mode of attack. In its less marked forms it appears as a slight leucocytal infiltration of the portal canals (*vide* Fig. 5), insinuating itself between the peripheral cells of the neighbouring hepatic lobules up to a very pronounced fibro-cellular invasion of these parts associated with dispersal and destruction of the liver-cells. The vascular walls are infiltrated (Fig. 6). Accompanying this condition there may be naked-eye gummata, even as small as a millet seed (miliary syphilomata of Wagner), or microscopical gummata, and these latter may alone be disseminated throughout the gland. Gummata visible to the naked eye are, however, quite rare in infants. I have only seen the condition once, viz. in an infant, aged 8 months,† in the shape of two small nodules. Coupland,‡ however, in a child, aged 3 months, found one large orange-yellow gumma, measuring 4 by $2\frac{1}{2}$ in., along with three others the size of beans.

Gummata, microscopically, consist of small round cells seated in a fine network of fibrils together with transitional nuclei intermediate between round and spindle shapes.§ Isolated small gummata cannot, of course, be discovered clinically, but where there is decided portal infiltration the liver shows unmistakable naked-eye alterations. It is large and hard or elastic and india-rubber like. Its edge is rounded. On section it cuts with a creeking noise and sensation, and in colour it is either yellow, or flint-like, or pale.

But indurated livers are rarely encountered clinically; on the other hand, it is reasonable to assume that the enlargements which are so common in this disorder are, in some cases at least, owing to less pronounced changes of the same character.

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* 'Syphilis of Children,' p. 54.

† *Loc. cit.*, p. 52.

‡ 'Trans. Path. Soc.,' vol. xxvii, 1896.

§ For a coloured plate of this condition see "Étude de 95 Cas de Syphilis Infantile," plate viii, A. Fruhinsholz, 'Revue d'Hygiène et de Médicine Infantiles,' tome ii, No. 1, 1903.

(*To be continued.*)

THE BONE AND JOINT LESIONS IN HEREDITARY SYPHILIS.

By A. H. Tubby, M.S.Lond., F.R.C.S.,

Surgeon at, and Surgeon in charge of the Orthopædic Department, the Westminster Hospital; Consulting Surgeon Evelina Hospital for Sick Children.

Apart from the "triad" of Hutchinson, namely, auditory, ocular, and dental affections, the bone and joint complications in hereditary syphilis, if not always the most obvious, are certainly the most persistent in their appearance.

The osseous complications are very frequently seen in the cranium, face, and in the extremities. They occasionally occur in the clavicle, ribs, and sternum, but I have not met with the disease affecting the spine.

The cranium.—We are all well acquainted with Parrot's nodes. Extended observation and carefully recorded cases show that the cranial signs may be classified as: (1) Partial or localised, and affecting a segment of the cranium; and (2) general affections of the cranium.

(1) *Partial.*—Partial manifestations are seen on the frontal, the lateral, and posterior parts of the skull, and are frequently associated either with premature closure, or the opposite condition of delayed closure of the fontanelles. The partial manifestations take the form of bosses, which are most marked in the frontal bones. According to Edouard Fournier hereditary syphilis may manifest itself, so far as the frontal bones are concerned, in three ways. The whole of the frontal bone may be unduly convex and prominent, giving rise to what is termed in France the *front Olympien,* or as it is sometimes called in this country the belly-like frontal bone. The more common condition of affection of frontal bones is an exaggeration of the normal eminences; and a rare form is the keel-shaped frontal bone, in which, in the position of the interfrontal suture, a vertical ridge of bone 1–2 cm. in breadth is developed, while the lateral aspects of the bones are flattened.

The local lateral manifestations of the disease are seen in the familiar enlargements of the parietal eminences, which may exist alone, or in conjunction with enlargement of the frontal eminences. In the latter form case we see the characteristic natiform or "hot-cross bun" cranium.

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[*] Read before The Society for the Study of Disease in Children, December the 13th, 1907.

The rarest of all forms of partial manifestation of hereditary syphilis of the cranium is the occipital enlargement. This takes the form of an excessive overgrowth of the occipital protuberance.

As to the histology of these hypertrophies, space does not permit me to refer to it.

(2) *General.*—This may take the form either of increase or decrease of the normal size of the skull-cap. The globular cranium associated with hydrocephalus is a type of the increased form, and is often difficult to diagnose from rickets with hydrocephalus. In hereditary specific disease it is found that most of the children affected die young, and do not survive until the usual time of the advent of rachitis. Characteristic examples of general decrease in the size of the cranium are seen in some microcephalic children. And lastly, Fournier has noticed the constant association of cranial asymmetry with inherited disease.

Of the bones of the face, the nose shows the most characteristic changes. In occasional instances the root of the nose is broadened extremely, and gives to the patient a leonine aspect. In other cases the course of the disease is destructive, and the bones of the nose become affected secondarily after the onset of chronic coryza, followed by purulent discharge, epistaxis, and ozæna. The type of nose seen varies. In some cases the depression is more marked at the bridge, while in other cases destruction has taken place at the extremities of the nasal bones, and there has also been some loss of the cartilage. Hence the nose is tip-tilted, and there is a deep furrow extending across it at the junction of the cartilage and bone.

With regard to the bones, even beyond the age of puberty, patients suffering from hereditary syphilis suffer from chronic pains, which are frequently ascribed either to growing pains or to rheumatism. The pains are felt more often in the legs than in the arms, and particularly about the crest of the tibia. They are exaggerated at night, and are sufficiently severe to keep the patient awake. They often come on in paroxysms, in which a distinct crisis can be recognised. In many instances they are not associated with any external signs, but in other cases distinct evidences of chronic osteitis, hypertrophy of large bones and gummata are found. The pains often last months or years, and not infrequently their nature escapes diagnosis.

The most striking of all the lesions of hereditary syphilis is what is known in France as the *Maladie de Parrot*, or as we term it here "syphilitic pseudo-paralysis." It occurs in young infants, and before the fourth month, and is most common during the second month of life. It comes on abruptly without any apparent cause. There is no history of injury, but the limb becomes useless and limp; hence the title "pseudo-paralysis." Then a swelling develops in the juxta-epiphysial region, which is tender on pressure, and associated with it there is an effusion into the neighbouring joint. If the disease be left untreated, separation of the epiphysis occurs and spontaneous fracture follows. In some instances pus forms, and the entire epiphysis is necrosed, and may require removal. But it is striking to note the effect of mercury in these cases, even when the disease has progressed beyond the serous stage of inflammation. If the pus be let out early and mercury vigorously administered, it often happens that the epiphysis is saved and may re-unite.

With reference to the other bone lesions, they are classified as —(1) localised thickenings, taking the form of hyperostoses or exostoses; (2) cicatrices adherent to bone; and (3) local deformities.

The exostoses are found either in the epiphyses or the diaphyses. The epiphysial variety most frequently affects the upper end of the tibia, but it is also seen in the extremities of the radius, the ulna, and at the malleoli. The diaphysial type of bone lesion is best marked in the tibia and the phalanges. In the tibia the exostosis or hyperostosis may be localised, and break down in the form of gummata. Or the whole shaft of the bone may be affected, giving rise to a perfectly characteristic deformity, which the French call *tibia en lame de sabre*. It is often mistaken for rickets, but the following points of distinction should be noticed: The curvature in specific disease is, as a rule, directly anterior, whereas in rickets it is mostly antero-lateral. In specific disease the crest of the tibia is rounded; in rickets it is sharpened. In specific disease the external and internal surfaces of the bone are convex; in rickets they are flattened and concave. As to the age when the deformity appears, in syphilis it may come on at any time up to the fifteenth year, in rickets rarely beyond the third year. In place of the coarse swellings and hypertrophies of the bones, their surfaces may be affected by numberless little irregularities. Many of these bone affections are associated with suppuration and give rise to cicatrices.

Joints.—Affections of these structures are usually secondary to those of the bones in the neighbourhood. In some cases of syphilitic epiphysitis the inflammation extends to the joint, and results in simple serous effusion or hydrarthrosis. In other cases the disease may be so extensive as to seriously involve the joint, either by direct continuity or by perforation and irruption of pus into the joint cavity. In older children, particularly about the ages of twelve to fourteen, a rarefying osteitis, associated with a deposit of caseous material in the cancellous tissue, affects many bones. The process extends to the articular cartilages, and results in grooving and pitting, the condition being known as chondro-arthritis. The signs of the affection are recurring attacks of synovitis, with chronic inflammation of the neighbouring bone. This form of disease is said not to respond to the usual remedies, and is practically incurable, in fact it may be described as a para-syphilitic manifestation.

Gummatous thickening of the synovial and sub-synovial tissues is not uncommon, and is usually associated with osteo-periostitis with the formation of osteophytes. Partial loss of movement and even complete ankylosis results, with muscular and ligamentous contractions.

It is noteworthy that the manifestations above referred to are usually seen at the larger joints, particularly the shoulder, elbow and knees. It is a question whether some forms of chronic deforming joint disease, having a very close resemblance to chronic deforming rheumatism and occurring in young people, are not manifestations of hereditary disease. It is certain that if careful inquiry be made, some of these children show unequivocal signs of syphilis.

But while the general surgeon, on the one hand, is apt to overlook the more remote sequelæ of the affection, and often fails to trace conditions to their origin; on the other hand, syphilographers are prone to assume that any disease occurring in a patient congenitally afflicted must necessarily be specific in origin, and some of the inferences and statements of these latter observers must be received with considerable caution and even scepticism.

SOME BONE LESIONS OF CONGENITAL SYPHILIS.

By G. A. Sutherland, M.D.Ed., F.R.C.P.,

Physician at the Paddington Green Children's Hospital; Assistant Physician at the North-West London Hospital.

I think we are sometimes hindered in arriving at a correct diagnosis of a lesion which is syphilitic by the fact that all the more common signs of syphilis are not present in the patient. It is not usual for a syphilitic baby to have about its person all the stigmata of congenital syphilis. If one system or one organ is very markedly affected the chances are that other systems or organs may escape, or be but slightly affected. A combination of syphilitic lesions which are visible certainly aids in the diagnosis, but in many cases the diagnosis, if made early, must be based on the appearance of one lesion. The age of occurrence is often a valuable help. A positive history of parental syphilis is useful, but a negative one is of no value. Treatment may prove a valuable aid in the diagnosis. By mercurial treatment some understand the administration of a quarter or a third of a grain of grey powder twice a day. This is an excellent stomachic remedy in some cases of indigestion, but its effect on a syphilitic lesion may not be manifested for some months. As a diagnostic agent mercury should be given in full doses—one to two grains three times a day. In the case of an active lesion a definite result will be recognised within one or two weeks. If the result is negative the drug need not be continued.

Syphilitic lesions of the bones during the first three months of life are common. They are: (1) syphilitic epiphysitis, (2) changes in the skull, and (3) osteogenesis imperfecta syphilitica.

The occurrence of pseudo-paralysis in a limb, coming on gradually, without marked fever or constitutional disturbance, and without any source of septic infection, is usually due to syphilitic epiphysitis. It yields readily to mercurial treatment.

The skull may show the characteristic changes of cranio-tabes, *i. e.* small areas of softening and absorption of bone in the occipital, parietal, and frontal regions. These areas are often so small as not to be palpable during life, but may be well seen post mortem, when the coverings of the skull have been removed. The changes around the fontanelle take the form of thinning of the bone, so that the margin may have an unusually sharp feel. This is in marked contrast to the thickening of the margins of the fontanelle which appear later as the result of rickets. General enlargement and thinning of the bones of the skull may follow as the result of hydrocephalus. Hydrocephalus, which is present at birth or develops during the first three months of life, is usually due to syphilitic meningitis about the base of the brain. Excellent results are obtained in many cases by the use of full doses of mercury.

One form of osteogenesis imperfecta would appear to be due to syphilis. At birth many of the long bones of the extremities may be found to be fractured, due to the mechanical strain during parturition, or possibly intra-uterine fœtal movements. While the fractures are usually in the shafts of the bone, there may also be epiphysial and subperiosteal effusion with marked swelling and tenderness of the limbs. Fresh fractures may occur after birth from merely handling the limbs. Fractures also are common in the ribs. The skull may show deficiency of bone formations in parts, and effusion under the pericranium. The condition is a very serious one, both from the severe nature of the syphilitic lesion, and from the weakening effect of the pain on the infant. Under full mercurial treatment a rapid improvement in the condition may sometimes be observed. The subperiosteal effusion subsides, the fractures unite firmly, and the only permanent trace of the illness is a distorted condition of the limbs from the badly united fractures.

CONGENITAL SYPHILIS.

By George Pernet, M.R.C.S., L.R.C.P.,
Assistant to the Skin Department, University Hospital.

Although the differential diagnosis of skin diseases from syphilis in infants is very interesting, especially as regards such conditions as seborrhœic dermatitis, Jacquet's erythème érosif des nouveau-nés, etc., and late manifestations of congenital syphilis about the skin chiefly, I do not propose to touch on these points, especially as I have dealt with them in a monograph on the subject (1). The chief interest of the present discussion is, I consider, heredity, the most important feature of syphilis now that the causal organism has been discovered. I have a strong objection to the term "hereditary syphilis," which is constantly used on the Continent, the English term "congenital syphilis," though not scientifically correct, being preferable. I think there is much vague talk about heredity, a subject about which very little is really known. A work such as that by Yves Delage shows how complex is the study of heredity. Then, again, there are Beard's views as to the antithetic alternation of generations in Metazoa and the wonderful germ-cells (see Beard's "Morphological Continuity of Germ-cells as the Basis of Heredity and Variation," 'Rev. of Neurol. and Psychiatry,' vol. ii, 1904, etc.). By "heredity" in the present connection I mean the conveyance of syphilis by the spermatozoon directly to the ovum. I contend that this does not take place. My view, which is supported by many facts, is that syphilis transmitted to the child is *always of maternal origin,* and that it is not a direct paternal infection. The mother of the child must be infected with syphilis before the child can receive it from her, and thus I am in agreement with what Mr.

Lucas* stated on this important point. I am particularly anxious that the subject should be discussed before this Society. In congenital syphilitics the liver is full of spirochætæ carried from the mother by the umbilical vein. I desire to refer to some cases of interest. An instructive case has been recorded by Jullien of a syphilitic man with supernumerary fingers whose infected wife was delivered of a syphilitic child, the child having supernumerary fingers also. But the same man's mistress had borne a healthy child, also with supernumerary fingers (2). I consider there is no doubt about the paternity in these two cases. Further, as to paternity there is always the possibility of a fallacy in arriving at a conclusion. The saying that it is a wise child that knows its own father has much truth in it. I believe that Colles's law is a law. The supposed exceptions when critically reviewed will not hold water. It is well known that a man with florid syphilis may, if he has no lesion about the genitalia, beget a healthy child. A very interesting instance of this kind is recorded by Matzenauer, who has written a most exhaustive account of congenital syphilis, which all should read (3). A healthy child was born, and the wife was not infected, although, as I say, the man was in a florid state of syphilis. He did not communicate syphilis to his wife, but at two years of age this child became accidentally infected from a sore on the lip of its own father. In that kind of case the wife might, of course, become infected by the husband subsequently (4). With regard to the sperm, Mr. Lucas† mentioned Finger's experiments, but Erich Hoffmann has not confirmed them. It is unfortunate that Finger did not examine the sperm for the treponema. But though the sperm may contain the parasites, I should not call infection by sperm heredity; I take it heredity means infection of the human cell ovum by the human cell spermatozoon. On the question of heredity I wrote a letter not long ago to the 'British Medical Journal' (5) in reference to an address on Mendelian heredity by Mr. Bateson (6), in which the latter referred to "pébrine," saying it was possible that some of those diseases might be due to the transmission of the disease germ through the reproductive cells as in "pébrine." That is the kind of statement brought up by those who wish to prove that syphilis is hereditary. Neither I nor Matzenauer have been able to verify the point, and when I called Mr. Bateson's attention to this the latter said: "Mr. Pernet properly insists that transmission of a disease germ in the egg is not the same thing as in the reproductive cells." That is very important. Of course, the egg may be infected afterwards, but that is not heredity in the sense defined. Mr. Bateson admitted he was wrong in using the more inclusive expression. There is no truth in the statement constantly being made that syphilis is on all fours with "pébrine." Heredity in tuberculosis (7) and leprosy have been given up, and so must it be in syphilis. In this connection I would refer to Gärtner's observations on the number of spermatozoa in sperm. Gärtner came to the conclusion that on the average only 1 out of about 85,000,000,000 spermatozoa had the chance of fertilising an ovum (8). I believe Colles's law to be accurate, and that great credit is due to the enunciator of it. Everyone interested in the subject of syphilis should read Colles's original remarks. Colles himself came across a case which appeared to contradict his conclusions, but further investigation showed that it was not an exception to what he considered the course of events in such cases. I have looked up several cases which were said to be exceptions. In one case I found the disease was not syphilis, but pemphigus neonatorum; the mother was infected with syphilis afterwards. Among others there is a most instructive case of Erich Hoffmann's, which should be consulted in this connection (9). I hope the Society will come to a clear understanding of the subject, particularly from the point of view of heredity, which I regard as the central theme in syphilis in the new-born. I repeat that in my opinion congenital syphilis in the child is derived from the mother, and that Colles's law is really a law.

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* British Journal of Children's Diseases, vol. v, p. 3.

† *Loc. cit.*, p. 5.

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Philadelphia Pediatric Society.

The stated meeting of this Society was held on December the 10th, 1907, Dr. C. F. Judson in the Chair.

A Girl, aged 3 years, Recovered from an Exceptionally Prolonged and Severe Attack of Cerebro-spinal Meningitis, was shown by Dr. D. J. M. Miller. There was much retraction of the head and cervical rigidity; the temperature was 103·8° F. Lumbar puncture gave three drachms of turbid fluid. The urine contained albumin and hyaline casts. The temperature fluctuated between 103° F. and 100° F., reaching normal some two and a half months after admission into hospital on March the 6th, and continuing so, with occasional exacerbations, until the present time. There was never any eruption—the rule in cases admitted into the Children's Hospital. Marked amelioration of the symptoms occurred by the end of March, but by May the 1st there was a recurrence, the rigidity and retraction of the head reappearing with greater force. Emaciation became extreme; the patient refused all food and vomited continuously, necessitating lavage for a period of five weeks. About June the 6th trophic ulcerations appeared on the occiput, buttocks, sacrum, back, and backs of the thighs. Some of these measured 3 by 2 cm. and exposed the bone, notably those on the occiput and sacrum. During this period, and for many weeks, the child remained in a state of complete apathy, oblivious to its surroundings, and apparently without sight and hearing. The eye-grounds were normal. By September the 1st the ulcers had healed and improvement begun. On October the 25th the patient could say "papa" and "mama." The rigidity of the neck had disappeared and the appetite was voracious. The legs could be extended to 45° without pain. She can now walk a little, and has gained 6¼ lb. in two months. Kernig's sign was constantly present, but the Babinski reflex was never elicited. The treatment was entirely symptomatic. Iodide of potassium was given for several months, and several lumbar punctures were made, but without benefit. The child was shown to illustrate how very ill these patients may be and yet recover completely. This little girl, with the exception of some emaciation, is now perfectly well, mentally and physically.

Multiple Abscesses of the Kidney from a Child, aged 15 months, with Severe Secondary Anæmia, was also exhibited by Dr. Miller. The patient, a girl, had had entero-colitis in the preceding July, and since then had been remarkably pale. She had been ill a few days when admitted into the hospital on November the 7th, 1907, with fever (103° F.), pulse 162, and respirations 52. A diagnosis of broncho-pneumonia was made complicating grave secondary anæmia, the latter, because of the blood count of hæmoglobin, 19–20; erythrocytes, 1,740,000; leucocytes, 22,000–25,000, and a differential count of 45 per cent.; polymorphonuclears, transitionals, 3 per cent.; small lymphocytes, 60 per cent.; basophiles, 2 per cent.; slight poikilocytosis and a few nucleated red cells. On admission the child was quite œdematous, particularly the legs and hands, but as the urine contained only a trace of albumin and no casts the œdema was attributed to the marked anæmia. The patient's appearance was typical of severe anæmia.

The skin was waxy and the mucous membranes colourless; the spleen was enlarged and tender to the touch.

At the autopsy all organs were found, with the exception of extreme paleness, quite normal macroscopically, except the kidney, which was the seat of an extensive, suppurative, embolic nephritis. The surface and the substance were studded with small metastatic abscesses. The ureters and bladder were normal. Cultures of the various organs proved negative. The urine collected from the bladder at autopsy showed many hyaline casts, and many pus and epithelial cells. The source of the abscesses could not be discovered. The lungs were normal.

Specimens from an Interesting Cardiac Case, in which a Diastolic Mitral Murmur was Probably Caused by an Anomalous Arrangement of the Chordæ Tendineæ was also exhibited by Dr. Miller. W. J—, aged 10 years, admitted into the hospital in June, 1907, had suffered with "joint troubles" since his second year, undoubtedly recurrent attacks of acute rheumatic polyarthritis. The heart's apex was outside the nipple line, sixth interspace; the upper border at the second rib; the right border one inch to the right of the sternum; transverse diameter six inches; at the apex a rough, diastolic murmur followed by a blowing systolic bruit and accompanied by a well-marked diastolic thrill; pulmonary second sound well accentuated; enlarged and pulsating liver; pulsating cervical veins; a soft murmur at the xiphoid cartilage; ascites and general dropsy. Everyone that examined the child confirmed the diagnosis of double mitral disease and tricuspid regurgitation, but at the autopsy no narrowing of the mitral orifice was found. This and all the orifices were enormously dilated, as well as both auricles and ventricles; the heart was enormous, weighing one pound, which is double the weight of an average adult heart. The mitral valve was thickened and sclerotic, and its tendons and musculi papillares were shortened and sclerotic, but there was no narrowing. On the contrary, the opening admitted three fingers readily. There was, however, an abnormal arrangement of the chordæ tendineæ. Springing from one of the columnæ carnæ near the ventricular septum a small tendon, half an inch long, extended to one of the tendons of the posterior mitral leaflet, to which it was attached. It was so arranged that during the diastole, when the left ventricle was distended, it must have offered an obstruction to the blood flowing from the auricle. As it is difficult to understand how this band could have produced, in itself, the long, rasping, diastolic murmur and thrill heard during life, it is more than likely that the thickened and sclerotic mitral curtains and the sclerotic papillary muscles may have contributed to the production of the murmur.

Traumatic Pneumonia, with Report of a Case in a Girl, aged 6 years, by Dr. James J. King. Trauma is considered as a predisposing case, just as alcoholism, exposure to cold, etc., are so considered; and the microorganism is the exciting cause. The symptoms are the ordinary symptoms of pneumonia plus the symptoms of the trauma.

His case occurred in a girl, aged 6 years, who had inhaled a steel carpet-tack, which remained in the lungs a total of twenty-six days. It was coughed up during a paroxysm of coughing, and complete recovery followed.

Dr. D. J. M. Miller said that Dr. King's patient, when admitted into hospital, had the signs of acute croupous pneumonia, while the pneumonia caused by foreign bodies is almost always broncho-pneumonia. In his opinion, however, the tack had acted as a predisposing cause, allowing the pneumococci to exert their influence, because the disease followed so closely upon the swallowing of the tack, and continued until its expulsion. Dr. King had found in the literature an analogous case.

A Paper on Bacteriological Studies of Noma, with the Report of Seven Cases was read by Dr. A. C. Rosenberger. These seven cases included one following typhoid fever and six following measles. Spreads were made from all the patients during life and after death. The bacterial flora observed in all the cases was so similar that a general description will suffice. Foremost and most abundant was the spirillum and the fusiform bacillus of Vincent; next in frequency, diphtheria-like organisms, streptococci, staphylococci, and (in two cases) pneumococci.

In four cases inoculations were made upon agar, blood-serum, bouillon, and egg-medium (Dorsett). The tubes were incubated, and the resulting growths consisted principally of an organism resembling the diphtheria bacillus. It showed granular and beaded forms, which were quite pronounced with Andrade's stain, and was Gram-positive. In a few spreads some few organisms responded positively to Neisser's stain. Together with this bacillus was an organism that resembled the pneumococcus and a few streptococci. The bacillus was isolated in pure culture and inoculated into the flank of a guinea-pig. Three days afterward an apparently painful swelling of the inoculated part was noticed. The animal did not move about with its accustomed vigour, and was irritable when handled. On the fifth day the animal appeared to suffer considerably, and went about the cage on three legs. Loss of appetite supervened, emaciation set in, and the animal was killed. At this time the swollen area had broken down, and an ulcer —or, more properly, a slough—3·5 cm. in length and 2·5 cm. in breadth had formed. Spreads and inoculations were made from the slough and from the heart's blood. In the spreads the bacillus originally isolated was found, together with an organism resembling the pneumococcus. In the cultures from the slough the same two organisms were obtained. After having obtained a pure culture of the bacillus 2 c.c. was inoculated into the peritoneal cavity of a guinea-pig, but no toxic action was noticed.

The fifth case was interesting principally on account of the extent of the gangrenous slough and its bilateral aspect. The infection followed measles. Four thousand units of antitoxin of diphtheria were given after cauterisation of the area without any benefit, the lungs remaining clear until the end.

At autopsy inoculations were made upon different culture-media, and the same organisms were recovered as during life—the diphtheria-like organism, and, in spreads, the symbiotic organisms of Vincent.

The sixth case was one following typhoid fever. In spreads the same bacterial flora was observed as in the other cases.

The seventh case was one involving the groin. Spreads from this area of gangrene showed enormous numbers of micrococci, long, wavy filaments, and spirilla-like organisms. Anaërobic cultivations were made, and an organism resembling the *Bacillus necrosis* as well as micrococci were obtained.

In sections of tissue made from two cases no organisms were seen except large emboli made up of micrococci. In two other cases the sections showed enormous numbers of wavy and spiral Gram-negative filaments, together with micrococci and streptococci. Together with these was a small number of diphtheria-like organisms. All these bacteria were best seen in the necrotic tissue, though a goodly number were seen penetrating into the healthy tissues.

These studies simply confirm the observations made by the majority of investigators that no specific organism has as yet been isolated in this condition. Dr. Rosenberger preferred to consider the diphtheria-like organism isolated by him as a pseudo-diphtheria bacillus rather than to call it a true diphtheria bacillus. The fact that the fusiform bacillus of Vincent is found in healthy mouths is well known, as is also the fact that the spirillum of Vincent is likewise seen in spreads from healthy persons. In the ulceromembranous stomatitis of Vincent both these bacteria are present, and usually in abundance.

Dr. Rosenberger thought that the affection known as noma is due to a symbiosis of a number of bacteria, the principal of which are the symbiotic organisms of Vincent. The reasons advanced for this supposition were that the disease is first evidenced by a membranous or ulcerative process ; that in this stage the fusiform bacillus and the spirillum of Vincent are present in great numbers, that, later, as the process goes on to gangrene, other organisms—such as the diphtheria-like organism, the streptococcus, or other micro-organisms—make their appearance, and that from this latter invasion toxæmia develops, and the disease goes on to a fatal termination. These facts are borne out by the study of these cases and the bacteriological findings.

Dr. B. Franklin Royer said that he had seen cases come into the hospital with membranous or ulcero-membranous Vincent's angina that could scarcely be differentiated clinically from true diphtheria, and he believed that Vincent's angina and noma are but two different stages of the same disease. Clinically, one can demonstrate three types : a membranous, an ulceromembranous, and a gangrenous. When the throat is the part affected the condition is spoken of as Vincent's angina ; but it is due to the same organism, no matter in what part of the body it is found. He asked whether these organisms had ever been successfully grown under anaërobic conditions.

Dr. S. M. Hamill asked whether the suggestion made by Herman, of New York, a few years ago, that the fusiform bacillus and the spirillum might be but different stages of the same organism, had ever been confirmed.

Dr. Rosenberger, in closing, replied that he did not believe the fusiform bacillus and the spirillum to be the same organism.

He also said that an observer had claimed to have been able to grow the organisms producing Vincent's angina anaërobically upon Loeffler's blood-serum, but that he himself had been unable at Blockley to grow anything at all resembling these organisms anaërobically. They have been found only in spreads. The spread exhibited was from a case in which the lesions were on the lips, the uvula, and the tongue ; in fact, all the structures of the buccal mucous membrane were involved. He had often found these organisms in almost pure culture in middle-ear disease, and thought that they must possess rather a widespread distribution. They are frequently found in the sputum in cases of gangrene of the lung.

A Unique Case of Infectious Orchitis in a Boy, aged 11 years, was reported by Dr. E. J. G. Beardsley (by invitation). Eight days after exposure to the infection of parotitis, during which time the boy was using an antiseptic mouth-wash and a similar preparation as a spray for his nose and throat, as a preventive, the boy developed a well-marked orchitis. There was apparently no other ætiological factor than the transference of the infectious principle of mumps.

Dr. Hamill has seen cases of mumps in which the sub-maxillary gland alone was involved.

Dr. Royer said that orchitis is common in many of the infectious diseases, he having met with it a number of times in cases of smallpox. In one case the orchitis seemed to follow an extensive sloughing of the skin. On looking back Dr. Royer thought it must have been a case of noma in which the entire scrotum sloughed away. In Dr. Welch's service there occurred a case in which two thirds of the scrotum sloughed away.

A Method of Computing Percentage Milk-formulæ that is really simple, by Dr. J. H. McKee. The method is applicable to top-milk methods alone, and to the use of top-milks derived from two levels of the jar (the upper half and the upper third), or of the whole milk. The writer did not contend that the method is as universally applicable or as mobile in its application as are those that employ certified milks and creams. Nevertheless, top-milk methods have been advocated by some of the foremost pediatricians, and, indeed, it is incumbent on those engaged in this specialty to give the general practitioner a simple introduction to percentage feeding and its benefits. Two exceedingly simple rules were given by Dr. McKee: (1) To know the ratio of the fat to the proteid in a given level of the jar, invert the fraction that indicates this level (upper third, 3 : 1; upper half 2 : 1; whole milk, approximately 1 : 1). (2) Make the percentage of proteid desired the numerator, and the amount present in the milk the denominator. Multiply the volume of the food to be given in the twenty-four hours by this fraction. The result equals the quantity of top-milk to be used in the mixture. The remainder is the diluent. One may follow either Holt's or Chapin's method with these two simple rules. Examples were then cited.

Dr. Judson remarked that anything tending to make the calculation of milk formulæ more simple would certainly be welcomed by the medical profession at large, and asked Dr. McKee how far he could calculate variations in the formulæ by this method.

Dr. Royer said that the profession owes a great deal to Dr. McKee for having simplified what has been a puzzling thing. He (Dr. Royer) had thought that Dr. Fussel's method was a great step in this direction, and had begun at once to make use of a set of Dr. Fussel's cards. Dr. Royer said that if Dr. McKee's formulæ were more simple he was ready to adopt them.

Dr. Alexander H. Davisson hoped that Dr. McKee's formulæ would soon be published, so that the profession might have a chance to study them carefully. New formulæ cannot be justly criticised until opportunity has been given to study them more fully than can be done at the time they are presented. By the top-milk method formulæ can be made satisfactorily; but it sometimes compels the wasting of the milk. In making a large quantity more than one jar is required to get the desired strength, and the under milk is unused. In regard to the reference of Dr. McKee to physicians that do not use any formulæ at all in making milk-mixtures, Dr. Davisson said that there should be no such physicians to whom reference could be made, since some one or other formulæ is essential in arriving at definite ingredients. Any other way is haphazard and unscientific.

Dr. M. Solis-Cohen asked what advantage Dr. McKee's method has over that of Dr. Chapin. The same results can be obtained with the Chapin method by taking nine-ounce milk as by using Dr. McKee's first formula, the 3 : 1; and the same result can by secured with the sixteen-ounce milk as with the 2 : 1 formula of Dr. McKee. Dr. Chapin gives 1 : 3, 1 : 2, and 1 : 1, and practically all modifications can be obtained from these ratios. Dr. McKee's method may be a little more flexible, but he asked whether it has any other advantage.

In reply to Dr. Judson, Dr. McKee stated that the method permits of but three sets of combinations, viz., those in which the relations of the fats to the proteids are 3 : 1, 2 : 1, or approximately 1 : 1. Dr. Cohen had confused Dr. Chapin's figures as Dr. McKee understood them. Chapin uses the upper nine ounces of the jar with a ratio of fat to proteid of 3 : 1; the upper sixteen ounces, with a ratio of 2 : 1; and the whole milk, with a ratio of 1 : 1. Dr. McKee said that he should also like to ask Dr. Cohen what he had meant by Dr. Chapin's single rule. Dr. McKee was ignorant of such a rule. It was his impression that Chapin gave only a number of useful and very carefully graded formulæ. Dr. Holt, on the other hand, gave three rules for three respective levels of the jar. Dr. McKee contended that his two rules are easier to remember than a number of formulæ on the one hand, or three rules on the other: yet the two rules given by him permit one to follow either authority. He had purposely avoided mentioning the formulæ to be used at different ages; for though all know that certain average formulæ are useful in the feeding of average babies of certain ages, yet individualism is the very essence of percentage-feeding.

Congenital Obliteration of the Bile-Duct with Cirrhosis of the Liver, by Dr. R. S. Lavenson. The case occurred in the service of Dr. J. P. C. Griffith, and Dr. Lavenson, having given the history, then considered the nature of the condition—whether the cirrhosis is primary, and a result of the elongation of the small intra-hepatic bile-ducts, which later descend and cause an obliterative cholangitis of the large bile-ducts, or whether the obliteration of the bile-ducts is the primary condition, causing a cirrhosis from biliary stasis. His conclusions were as follows: (1) Obliteration of the bile-ducts is the primary condition, causing a cirrhosis from biliary stasis; (2) this obliteration is the result, in most cases, of an anomaly of development; (3) as the same changes in the liver would result from the obliteration of the ducts from any cause, it is possible that some cases may result from the organisation due to an inflammation of the larger ducts, or to long-continued pressure on them from without.

. Dr. William C. Drein said that about a year before he had seen a case closely simulating that narrated by Dr. Lavenson. The child weighed seven pounds at birth, and was very yellow. It had long, dark hair, like that of a Japanese baby. The abdomen was much distended, the bowels constipated, the stools putty-like, and the urine deeply stained with bile. The condition went on for five or six weeks, and the obstetrician that had delivered the child continued in attendance. He gave calomel, without any result. Finally, although there was no specific history, he, at the suggestion of Dr. Drein, put the baby on inunctions of mercury. Within about two weeks after this there was a noticeable change, and at six months the baby weighed twenty-four pounds. It is still healthy. Dr. Drein did not feel sure whether the treatment was responsible for this improvement, or whether the cure was spontaneous.

Dr. Lavenson, in reply, said that various treatments for the condition have been reported in literature, but most have been without result. Operation has been resorted to in several cases in the hope that the obstruction might be near the duodenal end, in which case there could be a possibility of curing the condition by producing an anastomosis between it and some part of the intestines; but none of these cases recovered.

Regular meeting, January the 14th, 1908, D. L. Edsall, M.D., President, in the Chair.

Fibroid Nasal Polypus. Dr. Isaac H. Jones (by invitation) showed a boy, aged 13 years, who had a large tumour mass projecting from his left nostril. No growth had been noted until five years of age, when the left side of the nose became more prominent than the right. Bleeding from the left nostril began in June; a small polypoid growth the size of a finger-tip was found in August and removed in September. There was profuse bleeding. In two weeks the growth had recurred. In October almost all of the tumour was removed, but it still continued to grow. The specimens shown were removed with a snare in January, 1908, by Drs. Wharton and Stout. They were attached to the vault of the pharynx on the right side, though the main part of the growth was in the left nostril. The boy cannot breathe through either nostril now.

Dr. Henry R. Wharton said that in view of the danger of removal of the tumour by ordinary surgical operation he had asked Dr. Stout to see the boy, to obtain his opinion as to the possibility of its removal by the cold wire snare. Dr. Wharton, from the free bleeding and rapid growth, believed that the tumour was sarcomatous, and this opinion had been confirmed, the growth being a spindle-celled sarcoma. He assisted Dr. Stout at the operation, when a large portion of the growth was removed, but the operation had to be abandoned on account of the condition of the patient. He is now in good condition, and another attempt will be made to remove the remainder of the growth with a cold snare. If the growth should recur again it would probably be necessary to excise the superior maxillary bone on the right side to accomplish its complete removal.

Dr. George C. Stout said that the best method of removing such growths remains undecided. The general surgeon, as a rule, uses one of the so-called external methods, while the rhinologist usually prefers one of the internal methods. The external methods are very numerous, and are all more or less severe, involving the dissection of the external nose, clear of the face, or the tying of one or both external carotid arteries. Tracheotomy is usually indicated in the external method and occasionally in the internal method. As the dyspnœa in this case was not great tracheotomy was not considered necessary, nor would he advise it in any future operation on this boy. A cold wire snare is used in preference to the electro-cautery or other instrument. Adrenalin chloride and nitrate of silver (60 grains to the ounce) were freely applied to lessen the hæmorrhage, which was very nicely controlled in this way.

Spondylitis complicated by Psoas Abscess following Measles. Dr. J. Torrance Rugh spoke of the number of cases which have recently been added to the literature as cases of infection following measles, and believes them really to be of tubercular origin. All observers agree that measles is a serious infection in patients affected with or predisposed to tuberculosis. The soil is most favourable to the development of the tubercular process, and the histories of cases reported resemble closely that of a tubercular infection. Dr. Rugh detailed a case under his care, in which a girl had had an attack of measles at 3 years, recovering in about ten days. Within a week after recovery she presented symptoms of gastric disorder but obtained no relief from treatment. When seen by Dr. Rugh three months afterwards, there was a well-marked kyphosis in the lumbar region, with typical symptoms of spondylitis and an abscess in each psoas magnus muscle. The original cause was undoubtedly tubercular, stimulated to activity by the measles. Under proper mechanical treatment both abscesses disappeared and she began to improve. A year later both abscesses again formed after too free exercise, but disappeared after more thorough fixation and support were afforded, and now, four years since the onset, she is well, going about without any support.

Facial Paralysis in an Infant aged 3 months. Dr. J. Claxton Gittings showed the infant, and said three weeks before admission into hospital a foul purulent discharge from the right ear had appeared, without other phenomena. On admission she presented the characteristic facies of Bell's palsy. Dr. Randall reported an acute otitis media with granulations in the tympanic cavity and a foul-smelling muco-purulent discharge. The child died of broncho-pneumonia, having lost 1 lb. 6 oz. during the stay in hospital.

Routine Methods of Differentiating the Various Fats and Casein in Infants' Stools. Dr. T. A. Cope (by invitation) gave a demonstration of the methods of differentiating the various fats and casein in infant stools. The various purely chemical methods suggested were condemned as untrustworthy. The microscope, assisted with stains or chemicals, was advanced as best. He discussed the appearance under the microscope of free fat, fatty acids, soap and casein. The addition of equal parts of ether and alcohol to dissolve free fat under the microscope; the same to dissolve fatty acid crystals; the turning of fatty acid crystals to free fat by heat, and its return to crystals when cooled, were all spoken of. To differentiate soap and casein he suggested the method of Schmidt, which consists of adding acetic acid and heat to change soap to free fat, and on cooling, to fatty acid crystals. Casein by this method remains unchanged. A demonstration of the various methods followed.

Dr. D. J. M. Miller spoke of the difficulty everyone experienced in distinguishing fat from casein in infants' stools. He had so repeatedly found that the soft yellow masses generally believed to be fat curds could not be dissolved in ether and alcohol that he had abandoned the test as useless. He had, consequently, come to rely upon the clinical tests—viz. altering the ingredients in the food given, and then observing the changes produced thereby in the stools passed and in the general condition of the infant.

Dr. Gittings stated that all the cases whose stools Dr. Cope examined had been fed on low fat mixtures, on account of diarrhœa. He inferred either that their digestion and absorption of fat were much below par or that peristalsis allowed insufficient time for them. If chemical examinations of the stools were made more frequently in the beginning of digestive disturbances in infancy, and the percentage of fat in the milk mixtures were reduced at once upon the establishment of too great fat loss in the stools, it might be possible to determine whether this loss results simply from too high fat in the mixtures or from an inherent deficiency in fat emulsification and absorption. By the time these cases reach the wards of the hospital, where laboratory facilities are available, it is extremely difficult to differentiate the various factors involved.

Dr. Cope added that his specimens had been secured ten days before, when these babies were taking more fat in their mixtures.

Empyema and Gangrene of the Lung, complicating Typhoid Fever. Dr. Miller reported this case, in a girl aged 7 years, who was admitted into hospital on the eleventh day of a typical attack of typhoid fever. She had a few râles in her lungs upon admission, but was not especially prostrated. These increased, and by the seventeenth day of the disease flatness was found over the posterior and lateral portions of the left chest, as high as the seventh rib. A small quantity of turbid fluid was removed by exploratory puncture, which contained diplococci and streptococci only. The area of dulness increased, but no more fluid was found, even by frequent puncture. Cough was constant and the breath very offensive, but there was no expectoration. On the twenty-fourth day sero-sanguinolent fluid was obtained by puncture, and a rib resected the next day by Dr. Wharton. Death followed three days after operation. An autopsy could not be obtained. Typhoid bacilli were not found at any time, either in the blood or in the fluid removed by puncture.

Spina Bifida with other Malformations. Dr. John D. Target (by invitation) reported this case. The child was one of twins, both females, born at term. One was perfectly normal, weighing 7½ lb. The other, this child, weighed 5½ lb. The mother was tubercular. In the back of the child, in region of the second lumbar vertebra, was a small opening, with a sinus through which a grooved director could be passed. No sac protruded. The baby had hydrocephalus; supernumerary auricle on right ear; palate was open in the median line for an inch, backwards, from the alveolar process. There was no hare-lip. The bones of the arm and forearm were normal, and each hand had four fingers, but was without the thumbs. On the left hand, however, was a perfectly-formed thumb, hanging by a piece of skin, about ¾ in. long, attached to the region of the articulation of the radius and scaphoid. The abdomen was distended, especially in the hypogastric region. The sacral bone was wholly absent and below was a cup-shaped cavity in which the anus and vagina communicated; there was no perineum. The femurs seemed normal, corresponding to the size of the child. There was complete absence of knee-joints and patellas, and neither tibia nor fibula was present in either leg. The lower limbs were only about three inches long and absolutely devoid of any bony structures. There were club feet, the deformity being equinovarus. The toes were all irregular in position. The family would not allow an X-ray photograph to be taken, though this might have disclosed still more abnormalities.

Dr. Griffith said the case was most interesting on account of the excessive number of malformations and their association. Such association is frequent, but rarely are so many deformities found in one individual.

Dr. Edsall then delivered the Presidential address.

The following officers were elected for the ensuing year: *President*, Dr. J. P. Crozer Griffith; *First Vice-President*, Dr. Herbert B. Carpenter;

Second Vice-President, Dr. J. Claxton Gittings; *Third Vice-President*, Dr. Charles A. Fife; *Treasurer*, Dr. Howard Childs Carpenter; *Secretary-Recorder*, Dr. Maurice Ostheimer. *Executive Committee*: Drs. D. L. Edsall, S. M. Hamill, Alfred Hand, Jun., T. S. Westcott and B. F. Royer.

The Society for the Study of Disease in Children.

A MEETING of this Society was held at 11, Chandos Street, on Friday, January the 17th, Mr. SYDNEY STEPHENSON in the chair.

A Case of Congenital Hypertrophic Stenosis of the Pylorus Successfully Treated Medically, together with Observations on this Complaint.—Dr. GEORGE CARPENTER gave the history of a case which he had treated in conjunction with Dr. D. J. MUNRO, of Brixton, and which had recovered under medical treatment, diet, lavage and drugs being the methods employed. The infant was aged 2 months. It was breast-fed, and in good health for the first week, but, the bottle being substituted, it gradually lost ground, and, as the parents said, "in spite of being fed on a variety of foods it was sick after everything." At the time Dr. Carpenter saw it the infant vomited accumulated feeds, it was constipated, and was passing scanty and concentrated urine. It was wasted, and so weak and ill from starvation that it was thought it would not live through the night. The diagnosis was confirmed by the detection of the typical pyloric tumour as large as an almond and as hard as gristle. There was associated gastric peristalsis in the direction of the tumour. Owing to the infant's condition operative treatment was considered out of the question. It was ordered 2-oz. feeds of whey every two hours, drop doses of laudanum every four hours, and gastric lavage. This was on May the 22nd, and on the following day the opium was reduced by half because of somnolence, and was finally discontinued on June the 6th. During the treatment an attack of œdema, associated with albuminuria, difficulty of breathing, and also swallowing, came on. He coughed at his feeds, had to be propped up with pillows, and often had to be held up by his feet, as he choked and went black in the face. The infant weighed 7 lb. at birth, 5 lb. 13 oz. on May the 22nd, and on June the 14th 5 lb. 7 oz. On June the 7th humanoid milk was given (2-oz. feeds), and on the 14th milk 1 part and water 2 parts (2- to 3-oz. feeds) was substituted. Lavage was discontinued on June the 20th. During the first week of milk and water diet it lost 5½ oz. in weight, but after that it began to forge ahead and gained on an average an ounce a day. It vomited for the last time on June the 28th. Day by day it took increasing quantities of milk and water, rising from 18 oz. daily to 30 oz. on July the 6th. While on whey the bowels were open once daily, and the motions were green, but after it had been on milk and water for a week the stools became quite natural, and numbered 2–4 in the twenty-four hours. At 7½ months old, the middle of October, he weighed 16 lb., and was a normal baby, and he is still (January, 1908) doing well. Dr. Carpenter laid great stress on discovering the pyloric tumour, as, without detecting it it was impossible to be sure that the case was an example of hypertrophic pyloric stenosis. For pyloric spasm and infantile dyspepsia produced symptoms which could not be distinguished from the state in question. Vomiting of accumulated feeds, projectile vomiting, gastric peristalsis, constipation, and scanty urine could all be present without any tumour to account for them. He said that it was necessary to detect the tumour to prevent the mistake of operating upon cases where no tumour existed. He claimed that hypertrophic stenosis of the pylorus was a congenital condition, an abnormality of development and not a secondary muscular affection, the result of spasm, as claimed by Heubner and others. He said that in the cases he had examined microscopically not only was the pylorus muscle hypertrophied but the stomach muscle also, usually about the pyloric third or fourth. Sometimes all the stomach muscle was hypertrophied, but in that case also the brunt of the enlargement fell on the pyloric end. The musculature of the pylorus was an exaggerated condition of the normal, in which the circular fibres greatly preponderated. He thought that the occlusion of the pylorus might be due to reflex spasm, or, as he would suggest, in some cases to œdema or congestion of the mucous membrane, analogous to the congestive stricture of the urethra. But whatever the explanation of the obstruction of the pyloric channel might be, he considered that dyspepsia was at the root of the illness. Cure the dyspepsia, or better, avoid the dyspepsia, and the pyloric tumour could be very well left alone. He thought the secret of successful treatment lay, as in all infantile dyspepsias, in the discovery of what form of cow's milk (in the absence of suitable suckling) was least obnoxious to the infant's stomach. Feeds should be small, given regularly, and, above all things, the milk should be clean and fresh. In addition to this, gastric lavage was a well-tried and efficient remedy. Antispasmodic drugs could be used, but they did not appear to do much good. He thought that even the most hopeless-looking cases should not be abandoned by the physician, but submitted to dietetic treatment, and to those drug remedies which had proved beneficial in dyspepsia. As the result of medical treatment he thought that in the future there would be more medical successes and fewer surgical failures. He thought that if the surgeon were called in it should be late and not early. What the remote future had in store for the cases cured by the physician time would tell, but Seefisch had reported three cases that had to be operated upon before they were twelve years old, so it was possible that the visit to the surgeon would be merely postponed. If that were so, it was then even better for the child, as the mortality of the operation would be greatly reduced.

The Pathology of Congenital Hypertrophy of the Pylorus in Relation to Treatment.—Dr. Edmund Cautley said, accepting the view that there is such an affection as pyloric spasm, and that the action of the pylorus is that of the closed door which only opens in response to duodenal stimuli, the author argued that there is no evidence that spasm could cause hypertrophy. Almost all physicians had found anti-spasmodic drugs of no value in treating pyloric hypertrophy, a remarkable fact if the symptoms were due to spasms grafted on, or causing hypertrophy. Moreover, spasm might occur at any age, and yet these cases of hypertrophy were peculiar to the first few months of life, and there was no evidence of spasm at a later age causing hypertrophy. Recovery from pyloric spasm under medical treatment in cases mistaken for true hypertrophy had led to an unduly favourable estimate of the value of medical treatment in treating hypertrophy. The latter affection varied from a degree of hyperplasia, which was fatal unless treated surgically, down to a slight hyperplasia, which was compatible with life if no secondary affections occurred. These affections, viz. dilatation of the stomach, gastric catarrh, and occasionally acute œdema of the pyloric mucosa, were due to contraction of the muscle. In mild cases the degree of contraction might prevent sufficient nutritive food passing through the pylorus, and yet not set up the secondary symptoms. Three of his cases had been of this type, and under medical treatment had succumbed to marasmus, although food was present in the intestine after death. It was these cases in particular that made one critical of the assumed value of diet and lavage. Drugs he had found useless. A diet of whey or albumin-water, carefully regulated, would suit such cases for a time, but as soon as the strength of the food was increased secondary symptoms arose. On the assumption that the condition was produced by hyperchlorhydria, cases had been treated by undiluted cow's milk. Such a food had proved useless in his hands, and he suspected that the successful cases were due to pyloric spasm. Recent observations by Miller and Wilcox supported the view that there is no excess of acid in these cases, and all clinical and pathological evidence was in favour of the weak nutritive fluid rather than undiluted milk. Lavage would be useful in hyperchlorhydria and pyloric spasm, but it would hardly be expected to be of value in cases of mild hypertrophy without secondary symptoms. It seemed unnecessary if food were passing through the pylorus, if vomiting was absent, and if there was little or no dilatation. There were undoubted cases of this type. It was of great value in curing secondary dilatation and gastritis, but it only cured these secondary affections and not the hypertrophy, and might place the child in the *statu quo ante*. Then, if the degree of hypertrophy and contraction was compatible with life, the child might recover. He regarded it of vital importance to differentiate spasm from hypertrophy, and that the medical treatment of true hypertrophy should not be unduly prolonged, for the greater the degree of marasmus previous to operation, the smaller is the chance of the child's recovery.

Dr. SUTHERLAND protested against the assumption that if pyloric stenosis were cured medically it must have been in such a mild form that it would have recovered without treatment. Operation was a very serious matter, and many infants who had stood the operation died afterwards from bowel trouble of some sort. He did not think that, for a complete diagnosis, one should be able to feel a pyloric tumour, as the pylorus was a very uncertain thing to feel in an infant. The diagnosis could be made if vomiting, constipation, wasting, and marked visible peristalsis were present. Where trouble arose when breast milk was given the fault was not with the milk but with the manner of feeding. Small feeds of the most digestible material were required, and if there was a residue of food left in the stomach after washing out for a day or two the infant was not having suitable food.

Mr. LOCKHART MUMMERY said that it was scarcely possible to have a more unsuitable subject for a severe operation than the case described by Dr. George Carpenter. The child was very young and badly nourished, and had probably been vomiting all the nourishment given to it for some days before. Very few cases died on the table. The only patients in which the prospect of operation was good were those seen early before there had been wasting, and in whom there was a fair amount of fat.

Dr. CHARLES W. CHAPMAN said that in the condition under discussion there was a great deal of irritation causing the closure, and he was therefore surprised that no one suggested the administration of carbonate of bismuth. It might be given freely in as much as tea-spoonful doses.

Mr. Hugh Lett said the members were much indebted to the readers of the papers, as the subject was one of great importance. Surgical treatment was a very serious matter, and in many cases, by the time that the surgeon was called in the condition was practically hopeless. The physician should be clear at the beginning of his treatment how long he would continue medical measures, lest by unduly prolonging them the prospects of operation were affected. He advocated the claims of gastro-enterostomy as being simpler than pyloroplasty, and safer than Loreta's operation.

Dr. Reginald Miller suggested that the symptoms of pyloric stenosis were entirely referable to spasm. First, because of the onset of the disease. At the Clinical Society last year forty cases were collected, and in 70 per cent. of them the onset did not occur until the third or fourth week of life. He had a case in which diarrhœa preceded the onset of the symptoms. It was true that many babies vomited from birth, but not sufficiently to cause wasting, and the well-marked constipation was frequently absent during the first two or three weeks of life. That suggested that there was not marked blocking at the pylorus as a congenital lesion. Secondly, only the circular coat was hypertrophied, and he agreed that if it were spasm the longitudinal coat would be hypertrophied. But if the longitudinal coat were hypertrophied presumably there would be no symptoms. Thirdly, that although the baby did not live, yet as the result of lavage and careful dieting it usually died of diarrhœa, showing that the pylorus was once again patent, and that something had happened, for presumably the spasm had been relaxed. A fourth and controversial point was that a few cases got well in which gastric peristalsis was observed week after week, and in which the tumour might be palpable for weeks. Such cases strongly simulated the real condition which Dr. Cautley referred to, and he, Dr. Miller, thought they were quite identical.

A Case of Congenital Heart Disease in a Girl, aged 17 years, was shown by Dr. T. R. Whipham. There was no cyanosis or clubbing. There was a history of slight rheumatism in the feet three years previously, but none of rheumatic fever or chorea. The left ventricle was greatly hypertrophied, and over the upper part of the sternum there was a marked thrill. In this region, and to the right, a loud systolic murmur was audible which could be heard all over the præcordium. There was no polycythæmia. The diagnosis was some malformation of the great vessels, possibly a patent ductus arteriosus.

A Case of Syphilitic Synovitis of the Knee-joint in a Boy, aged 7 years, was shown by Dr. Porter Parkinson. He was the subject of congenital syphilis, and the effusion followed periostitis of both tibiæ. There was marked effusion, but no pain or tenderness, and no alteration in the bony structure of the joint.

Dr. Parkes Weber said he believed that in syphilitic joint diseases the Röntgen rays were of great use in diagnosis.

Mr. Hugh Lett considered it a typical case of synovitis of the knee due to inherited syphilis, and he thought these cases were important, as they were occasionally diagnosed as being due to some other cause. He had seen several cases which had been treated with splinting for some time in consequence of a diagnosis of traumatic synovitis having been made. In another important variety of the congenital syphilitic joint there was considerable thickening of the synovial membrane, with little or no effusion into the joint. Both these types—viz. with or without effusion—were occasionally treated as tuberculous joints. The most striking feature in these cases was the absence of pain on movement.

The CHAIRMAN (Mr. SYDNEY STEPHENSON) said he thought the way mercury was used had something to do with the result. Some of the syphilitic joints associated with interstitial keratitis yielded to intra-muscular injection of mercury.

Dr. PORTER PARKINSON, in reply, said the effusion in the knee-joint appeared while the child was under mercurial treatment for periostitis of the tibia.

A Case of Cretinism in a Boy, aged 9 years, was shown by Dr. G. A. SUTHERLAND, who was seen in November with typical signs of cretinism present. He improved very markedly under thyroid treatment. Growth in the long bones was very delayed, and pituitary extract had been given without any benefit so far. He asked if any member had seen any improvement from pituitary extract in a similar condition.

Dr. PARKES WEBER said he had never seen any improvement of any condition from pituitary treatment. He had never used it himself.

A Case of Tubercular Peritonitis in a Girl, aged 9 years, was also shown by Dr. G. A. SUTHERLAND. When first seen in September the case seemed hopeless: there had been signs of tubercular peritonitis for five months. She was wasted and in a stuporous condition. She suffered from diarrhœa, and had delirium at night and hallucinations during the day. She is now convalescent, and the signs of active tuberculosis have subsided, although the abdomen is still distended.

Dr. CAUTLEY agreed that the prognosis in uncomplicated tubercular peritonitis was eminently favourable if there were no tubercular masses and no purulent effusion. When patients died it was found that they had secondary complications, such as tuberculous disease in the lungs.

Dr. GEORGE CARPENTER said he had followed up a series of cases of tuberculous peritonitis which he had published in 'International Clinics,'* and he was surprised at the number of deaths. Thus of 31 children 15 died, 6 were doubtful, and 10 were alive at the time of writing, and so far as was known in fair health. He had then stated that tuberculous peritonitis is not infrequently cured, and perhaps more often resolves than any other form of tuberculosis, but that he was not prepared to think it other than a very fatal disease. Since writing this he had seen no need to alter his views. In the special discussion on tuberculous peritonitis † he had pointed out that "implication of other organs in fatal cases of primary abdominal tuberculosis is not uncommon, and of all organs and structures the lungs appear to be most likely to be attacked. Invasion of the lungs in such cases probably occurs *via* the thoracic duct and pulmonary artery, the lungs acting as a filter. This is contrary to the experience of others who consider that food tuberculosis may get well or spread, but never leads to tuberculosis of the lungs." Sometimes these cases die of meningitis.

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* Vol. iii, p. 83, 1891.

† 'Reports of The Society for the Study of Disease in Children,' vol. iii, p. 109, "Tuberculous Peritonitis."

Dr. SUTHERLAND agreed that many such cases died, and that they did so from some such complications as had been mentioned. The combination of open-air treatment and diet brought about the cure of his patient; drugs had no part in it.

A Case of Acute Polio-encephalitis following Measles was shown by Dr. McMASTER (introduced) (for Dr. GUTHRIE). The patient, a girl, aged 5 years, was well nourished and intelligent, but had spastic diplegia. There were no ocular symptoms; there was weakness of the muscles of the back, so that she could not sit upright and could not hold her head up. The condition simulated one of congenital spastic diplegia.

A Case of Supernumerary Auricles in a Boy, aged 3 months, was shown by Mr. P. LOCKHART MUMMERY. On each side of the head there was a supernumerary auricle situated just in front of the external auditory meatus. On the right side it was about half the size of the normal ear; on the left side it was much smaller. There were no other congenital defects.

Abstracts from Current Literature.

Medicine.

A case of idiosyncrasy to fat in a nursing infant ('*Berliner klin. Wochens.*,' *November* 4, 1907, *No.* 44; '*Gesellschaft der Charité Aerzte,*' *July*, 1907).—**Langstein** showed a case in which he thought the history and the course of the disease were especially interesting. The mother of the child was neurotic and lived in good social surroundings. The child was fed at the breast for four weeks. As this seemed hardly to suit it, in the fifth week it was ordered to be fed on cow's milk. From the eighth week it took daily 6 oz. of milk with eight times the quantity of other fluid. This excessive feeding was stopped, and the child was given two parts of barley-water with one part of milk, 6 oz. of milk daily as before. To each bottle half a teaspoonful of milk-sugar was added. On this diet a steady loss of weight took place; the child had frequent and persistent vomiting immediately after feeding and showed great restlessness. Under these circumstances, there being not much else outwardly the matter, the child was brought to the clinic. The most noticeable symptom on admission was such intense paroxysmal restlessness as is seldom seen in a child; there was a state of hypertonus and slight stiffening of the neck, which, together with the restlessness, were thought to be of cerebral origin; a lumbar puncture showed completely normal pressure and a normal proportion of cerebro-spinal fluid. It was now decided to put the child to the breast. It took on the first day 3½ oz. of milk, which was succeeded by great restlessness and jactitation, but none of the symptoms which Finkelstein attributes to auto-intoxication; no sugar was found in the urine, and breathing was normal. The next day the child was put to the breast again and consumed over a pint of mother's milk; this aggravated the symptoms, and the restlessness was so great that two injections of chloral were given in order to procure sleep. The temperature rose to 100·4° F. It was then determined to leave off the pure human milk and to give a modification of milk such as was introduced by Dr. Salge—viz. human milk freed from fat. Upon this the child was quieter and the temperature went down. After this experience human milk was left off entirely, and the child was given butter-milk, and also milk which had a minimum of fat and a large proportion of carbohydrates. Thereupon the condition of the child altered immensely; it became free from fever, but the weight kept stationary. It was interesting to note that each time the child was given human milk with the butter-milk there was a decrease of weight, and when all fat was eliminated the weight increased with the general improved condition. Langstein thought that undoubtedly in this child an idiosyncrasy to the fat of human milk was evident, but that this idiosyncrasy was not of the same nature as is seen in the acute stage of auto-intoxication or convalescence from the same in which, when the child is put directly to the breast or given fat-containing food, a fatal result may ensue. With respect to the causation in this case, he thought it must remain quite uncertain whether the idiosyncrasy to the fat of human milk was primarily caused by the long-continued, unsuitable feeding with cow's milk, or whether it existed previously; not having had the child under observation he had no precise notes on the subject. It was known that there was much nervous excitability among sucklings who from the first cannot tolerate human milk or show a marked loss of weight upon it; he thought there was no doubt that in this case a neurosis played a part, the child being especially impressionable. In support of the view of Finkelstein's "alimentary fever," it was noticed that when the child was given fat an elevation of temperature occurred, and when fat was left off the temperature subsided. He thought there was an ill-defined anomaly in fat assimilation different from that which is seen in the "exudative diathesis" of Czerny, this child showing no symptom of exudative diathesis. In the discussion which followed it was elicited that an investigation as to the assimilation of fat and a microscopical examination of the stools had not been undertaken in order to ascertain how far fat absorption had been disturbed causing fat in the stools. There was no abnormal retention of the stools; they were rather more copious, but did not take on the nature of fatty stools. Langstein did not think that this circumstance could in any way clear up the nature of the illness. Hauser remarked that an unusual appearance of fatty stools does not go absolutely hand in hand with severe auto-intoxication; they are very frequently found in children who show absolutely no toxæmia. It was not ascertained if, when the child showed meningeal symptoms, there was any acidosuria. J. E. Bullock.

Neurotic diabetes insipidus (*'Allgemeine Wiener med. Zeitung.,' No.* 46, *November* 12, 1907; *'Klub der Weiener Kinderaerzt,' October* 29, 1907).—**Mautner** showed a girl, aged 14 years, of nervous heredity, who had been under treatment in the Children's Hospital from September 17 to October 14 for diabetes insipidus. The patient, who was imperfectly developed for her age, had in June of the same year passed through an attack of appendicitis. During the course of the disease and its subsidence the parents noticed an excessive appetite for food and drink with a loss of weight and polyuria. Up to the time of an operation for polypus and subsequent pneumonia the child was always healthy. When admitted the patient weighed 70 lb.; while under treatment, with the exception of pronounced hysterical stigmata, she showed nothing unusual. The urine passed on the first day amounted to twenty pints with a consumption of fluid of twenty-four pints. There were the usual characteristics of diabetes insipidus. The treatment was, at first daily vapour baths and electric baths and injections of pilocarpine; this having no effect on October 3 treatment was changed to a daily passage of a stomach-tube. The next day the urine sank from twenty pints to fourteen pints, and the fluid taken to fourteen pints, and both on the next day to ten pints, then to seven pints, and on the day of leaving the hospital to 70 ozs.; meanwhile the body-weight went up to 74 lb. The child was treated further as an out-patient, and the benefit continued after all treatment was left off. Mautner was of opinion that this was a case of diabetes insipidus in an hysterical subject, and that the therapeutical effect was the result of suggestion. He called to mind the theory which connected diabetes insipidus with a sympathetic neurosis brought about by absorption of toxic products from the intestinal tract, but in this case the stomach-tube only was passed without washing out the contents of the stomach.

J. E. Bullock.

Craniotabes (*Thèse de Paris*; '*Arch. Méd.*,' *September*, 1907).—**Aucouturier** states that softening and thinning of the cranial bones is to be found most frequently between the third and eighth months. It is not the cause of convulsions or spasm of the glottis, which may occur coincidently with it. All these symptoms have a common origin in digestive disturbances brought about by improper feeding in early infancy. Craniotabes is a rachitic lesion, chiefly when the disease occurs early, but it is to be noted that the condition also exists in well-nourished, breast-fed infants who present no trace of rickets. In other words, although craniotabes is usually of rachitic origin it is not invariably so. The condition is frequently found in cases of hereditary syphilis, but the syphilis is not the direct cause. Syphilis acts on the general nutrition and causes rickets and craniotabes at the same time. In congenital rickets craniotabes accompanies the other malformations, but it may exist alone at birth and be followed later by other manifestations of rickets.

T. R. Whipham.

Œdema in the newly-born and the infant ('*Rev. Mens. des Mal. de l'Enf.*,' *September*, 1907).—**d'Astros** states that œdema is common in debilitated children at birth, and especially in premature infants. It may appear shortly after birth or not for several days, and is, as a rule, first found in the lower extremities, and may spread in some cases so as to be more or less general. Under appropriate treatment, such as external warmth and proper feeding, in some cases it disappears in three or four days, though it may last much longer. In the course of this simple œdema there is no albumin to be found in the urine, and the condition is probably due to respiratory insufficiency and circulatory stasis. In some cases the œdema of the newly-born is to be attributed to an acute infection of a septicæmic nature. In such cases the kidneys are nearly always attacked, their power of elimination being thereby reduced. The diagnosis of an infective œdema often cannot be made at first, but the presence of albuminuria, or evidence of inflammation of the umbilicus, skin, or mucous membrane of the respiratory and alimentary tracts renders such a diagnosis probable. Certain chronic infections also may produce œdema in the infant, and of these hereditary syphilis is the chief. The œdema in syphilitic children may develop later, but at times it may be of diagnostic importance. In cases with enlarged liver and spleen the presence of œdema greatly aids the diagnosis of hereditary syphilis. Affections of the respiratory system may also cause œdema. Certain forms of cough, especially those of a convulsive nature, as in influenza and whooping-cough, frequently cause a facial œdema. Lastly, œdema may occur as the result of digestive disturbances in severe cases of enteritis, and grave anasarca may develop. In many of these cases there is no albumin in the urine, and the œdema is due to a retention of the chlorides in the tissues.

T. R. Whipham.

Typhoid fever in infancy and childhood (*'Arch. of Pediat.,'* 1907, *p.* 659).—**Edwards.**—The paper is based on 180 cases of typhoid fever. Two were under two years, 26 were between two and five years, 67 between five and ten years, and 85 between ten and fifteen years. The duration of the disease is shorter in infants than in older children, and rose spots are less often found. Relapses and recrudescences are commoner and complications rarer than in childhood. Bronchitis is not so frequent, but bronchopneumonia is commoner. In childhood an acute onset is more frequent than in adults. It occurred in 29 per cent. of those between two and ten years, and in 26 per cent. of those between ten and fifteen years. As a rule the duration of the disease is shorter and the temperature curve lower in children. Relapses and recrudescences are more frequent than in adults. They occurred in 13 per cent.; 22 per cent. after severe cases, and 11 per cent. after mild attacks. Their average duration was fifteen days. Diarrhœa is more constant in children than in adults. In the two infants diarrhœa occurred, between two and five years 45 per cent., and between ten and fifteen years 48 per cent. had diarrhœa. Complications in childhood are infrequent and mild. Cardiac weakness is much less common than in adults. Intestinal hæmorrhage is rare. It occurred in only four cases. Perforation occurred in two cases, one of which recovered after operation. Laryngeal affections are less common than in adults. Bronchitis is common. Chorea is an occasional sequel. Parotitis occurred in one of the fatal cases. The mortality was 3·3 per cent. All the deaths were in children over ten years.

J. D. Rolleston.

The prodromal period in German measles (*'Arch. of Pediat.,' p.* 766, 1907).—**Miller** had previously recorded three cases, in two of which this period lasted two days and in one five days ('Arch. of Pediat.,' January, 1905). He now reports two more cases in adults who had both had scarlet fever and measles in childhood. In the first case, a woman, aged 22 years, headache, backache, and a sensation of fatigue in the legs lasted forty-eight hours before the appearance of the eruption. The second case, a man, aged 36 years, during an epidemic of rötheln, had headache, backache, muscular fatigue, and a temperature ranging between 99·5° F. and 100° F. for three days, the rash appearing on the beginning of the fourth day.

J. D. Rolleston.

Gangrene of the skin in measles (*'Gaz. degli Osped.,' June* 9, 1907, *p.* 733).—**Antonucci.**—Apart from cancrum oris and noma pudendi gangrene in measles is rare. The present case is that of a healthy boy, aged 13 months, who, two days after the appearance of a measles eruption, developed bluish-red tender swellings in the groins, the genitals being unaffected. Linseed meal poultices were applied, and two days later the swellings broke and gave issue to a little sero-purulent discharge. Gangrenous areas also developed on the buttocks and on the inner side of the right thigh. There was considerable constitutional disturbance. Recovery took place after the application of iodoform and ichthyol.

J. D. Rolleston.

Nephritis and herpes zoster in mumps (*'La Clin. Med. Ital.,' July, 1907, p.* 437).—**Allaria.**—A girl, aged 5 years, on the sixth day of an attack of mumps developed acute nephritis, which lasted for a month. Herpes zoster simultaneously appeared over the sixth, tenth, and eleventh ribs on the left side. In most cases nephritis in mumps occurs one or two weeks after the disappearance of the parotid swelling. There are only four other cases on record in which the parotitis and nephritis co-existed.

J. D. Rolleston.

Gonococcal stomatitis and septicæmia (*'Riv. di Clin. Pediat.,' September*, 1907, *p.* 745).—**Flamini.**—A child, aged 26 months, became infected by sucking the urethral syringe of his father, who was suffering from gonorrhœa. In a few days the lips became swollen, their inner surface was much reddened, and the free margin presented ulcerations, which became covered with a yellowish, purulent exudate. Mastication was rendered almost impossible. For a few days there was a trace of albumin in the urine. Remittent fever with marked nocturnal exacerbations developed, and shortly afterwards a morbilliform eruption appeared. The general condition was grave. Subsequently the left shoulder became swollen and painful. Microscopical examination of the labial exudation showed numerous polynuclears containing gonococci. A specimen of blood from the left elbow also yielded gonococci. Fairly rapid improvement took place in the local condition after the application of silver nitrate solution (1 in 100). Friction with collargol (15 per cent.) in various parts of the body was also adopted. Convalescence was slow, but the child made a good recovery.

J. D. Rolleston.

Family nystagmus (*'Ann. de Méd. et. Chir. infantiles,'* 1 *décembre*, 1906.—**Apert** and **Dubosc** report a remarkable series of cases of essential nystagmus in a family, and discuss the subject of familial nystagmus generally. Cases of the kind, although perhaps not common, are, of course, well known to ophthalmologists. Owen published a series of such cases affecting four generations of a family. McGillivray has reported movements of the head in association with the nystagmus. Audeoud has published the genealogical tree of a family counting seven examples of horizontal nystagmus in three generations consisting of nineteen subjects. Jacqueau has studied two cases of nystagmus, with associated movements of the head, in a mother and a daughter. The most complete study, however, we owe to Lenoble and Aubineau,* who reported about sixty cases of nystagmus, often with myoclonic movements, trembling of the head and sometimes of the entire body, quivering (*tressaulements*) of the muscles of the limbs, exaggeration of the knee-jerks, vaso-motor disturbances, and congenital dystrophies. Forty-two of the patients were derived from fourteen families. Lenoble and Aubineau, relying on the frequent co-existence of myoclonic disturbances of muscles in other parts of the body, regard these cases as a variety of myoclonus, localised chiefly or exclusively to the ocular musculature. The familial character of the disorder tells strongly in favour of their view, since several varieties of myoclonus are known to be family affections. These facts have led Lenoble and Aubineau to christen the condition, "myoclonic nystagmus." The cases described by Apert and Dubosc were characterised by the appearance of the nystagmus during the course of some febrile malady, as gastro-enteritis, measles, or scarlet fever, the absence of trembling of the head or extremities, of myxœdema, chorea, or of muscular shaking, the frequent exaggeration of the reflexes, especially on the right side, and, finally, the predominance of the female sex. The details of the cases were briefly as follows: The mother, one of fifteen children, of whom none others was affected, suffered from congenital strabismus, and also from slight nystagmus when she fixed an object in extreme abduction. There was no nystagmus when the eyes were at rest. This woman had been married twice. By her first husband she had had four children, and by her second, six children, and of the ten children by the two marriages three girls and two boys had more or less nystagmus. To go a little more into detail: of the children by the first marrage, three unaffected children were dead, while one, now aged 13 years, had no nystagmus, although he was affected with fibrillary twitchings of the muscles of the lips, coming on every two or three minutes, and affecting especially the upper lip. The second husband, aged 38 years, was dyspeptic, and had always been subject to violent migraine, neuralgia and pain. His mother had suffered from auditory hallucinations of a temporary nature. By this man, as already stated, there had been six children (three girls and three boys), and every one of the offspring were affected with nystagmus—essential and not symptomatic of any disease of the nervous system. At the same time, in three of the children, the knee-jerks were manifestly exaggerated. The fundi (examined by Antonelli) showed no particular ophthalmoscopic changes. The authors think that their cases were affected with Lenoble and Aubineau's disease, namely, myoclonic nystagmus, of the heredito-familial variety. It is to be noted that the mother came from Dinan, in the Cotes-du-Nord—that is to say, from the same district whence most of the cases reported by Lenoble and Aubineau were derived. It is sugggested that the ancient race of Bretons may be particularly subject to nervous maladies. In reference to the fact that in Apert and Dubosc's cases, girls suffered more than boys, which is contrary to the general rule, the authors explain the exception by saying: "*Chaque famille fait sa maladie familiale à sa manière, et la transmission se fait souvent selon les règles particulières à la famille observée.*"

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* Lenoble, 'Archives de Neurologie,' 1902; Société neurologique, 1905; Académie de Médecine, 1905; Société de Biologie, 1906; Revue de Médicine, 1906.

SYDNEY STEPHENSON.

Albuminuria in eczematous children (*'La Pediatria,' September, 1907, p. 677*).—**Loke,** from observations made at Professor Fede's clinic at Naples, concludes that: (1) Renal complications are common in children with eczema and who are at the same time dyspeptic, and are met with in 57 per cent. of the cases. They precede the symptoms of eczema, at least in those cases where the dermatitis is in relation with gastro-intestinal disturbance. (2) The albuminuria depends largely on toxic products of gastro-intestinal origin, on the alimentary albumin that has failed to be completely modified by the digestive juices, so altered as not to be perfectly assimilable by the cellular elements, and also in a small degree depends on an auto-intoxication caused by the skin lesions and some toxines and germs which have escaped the barrier of the lymphatic glands which surround the area of the skin lesion. (3) This albuminuria constitutes a real danger, inasmuch as it indicates a state of irritation of the kidney which may develop into nephritis should the exciting cause continue. (4) Cure of the cutaneous lesions alone will not effect the cure of, nor ameliorate the renal complication, which can be easily subdued by appropriate treatment such as milk diet and calomel, which also favourably influences the skin affection and hastens its disappearance. (5) Rapid recovery, the result of simultaneous cure of the eczema and of the gastro-intestinal disturbance, are not followed by general complications. VINCENT DICKINSON.

Infantile progressive spinal muscular atrophy (*'Münch. Gesellsch. f. Kinderheilk.,' February* 15, 1907; *'Monatschr. f. Kinderheilk.,' April,* 1907, *S.* 59).—**From** showed the case of a female child, aged 2 years, suffering from this complaint (Werdnig-Hoffmann type). The features were: family appearance of affection, onset in second year of life, inability to sit up, lordosis on attempting to stand, absence of knee-jerks, diminished electrical excitability of muscles, atrophy of muscles of the back, pelvic girdle, and lower extremities. The prognosis is desperate. ERNEST JONES.

Four cases of muscular atrophy (*'Münch. Gesellsch. f. Kinderheilk.,' February* 15, 1907; *'Monatschr. f. Kinderheilk.,' April,* 1907, *S.* 59).—**Pfaundler** showed the following four cases: (1) Case of Hoffmann-Werdnig disease in a boy, aged 8½ years. An elder brother had died of the same complaint. The symptoms dated seven years back, so that the case is very remarkable on account of its unusually chronic course, and it was now very advanced. (2) Typical case of pseudo-hypertrophic muscular atrophy in a boy, aged 9 years. Many males in the family had been affected, the disease being transmitted by the females. (3) A similar case to the last, in a boy, aged 15 years, in whom the symptoms had begun at the age of five. (4) In contrast to the progressive family diseases of the last three patients was shown a case of extensive atrophy in a boy, aged 12 years, which had appeared with an acute onset at the age of three years and had not progressed at all. The diagnosis lay between neuritis and myelitis.

ERNEST JONES.

Endocarditis in infants (*'Monatschr. f. Kinderheilk.,' May,* 1907, *S.* 78). —**K. Lempp**, in an interesting paper, reports seven cases of this rare phenomenon. An account of the post-mortem examination of six of the cases is given. In contra-distinction from the condition in older children general infections (tuberculosis, pneumonia, sepsis, etc.) are the chief causes, rheumatism being extremely rare. The signs also differ essentially from those occurring in older children. The local signs are usually absent. For instance a murmur is rarely heard; in none of the present cases was it ever heard. Similarly evidences of dilatation are difficult or impossible to make out. On the other hand, general signs of circulatory failure are constant and important. Such are, the blue colour, frequent attacks of cyanosis, rapid and varying pulse, etc. The most important sign of all is the extreme frequency of respiration, which often produces a pulse-respiration ratio similar to that of pneumonia. ERNEST JONES.

The fourth disease (*'Brazil Medico,' September* 15 *and* 22, 1907).—**Guimarães** deals with this question very exhaustively; the whole literature of the subject is considered, Dukes, Broadbent, Poynton, and other British writers being extensively quoted. Austregesilo's cases seen in Rio de Janeiro are also considered (Abstract, BRITISH JOURNAL OF CHILDREN'S DISEASES, vol. iv, No. 2, p. 72). The writer's conclusions are: (1) The scarlatiniform rubeola of Filatow-Dukes is not a variety of rubeola (rubella) nor an attenuated form of scarlatina; (2) Filatow-Dukes's scarlatiniform rubeola is a "fourth disease," perfectly distinct from measles, rubella, or scarlatina. M. D. EDER.

Jacksonian epilepsy without lesion ('*La Sem. Med.,' June* 26, 1907.) **Acuña** showed a child, aged 11 years, who had suffered from epileptic fits since the age of 2 years. They commenced in the right arm, then followed in face and leg of the same side and were recurring every five minutes. Cranectomy showed no lesion and a few hours after the operation the attacks recommenced. Mercurial treatment in large doses was instituted. The convulsions slowly ceased, and ten days later there were no further attacks. The child had remained well. The author is unable to say whether the operation or the mercury produced the cure. There was no evidence of syphilis. M. D. EDER.

Retention of urine in a child ('*Wien. klin. Rundschau,' October* 27, 1907).—**Blum** had under treatment a boy, aged 13 years, who had suffered from infantile convulsions. At the age of six he sustained a fracture of the frontal bone and one and a half years ago was attacked by hæmaturia. Since then there was constant incontinence of urine. On examination the bladder was fully distended, the genital organs abnormally small. The nervous condition was negative save for an increase in the reflexes of the knee and heel. The bladder was gradually emptied, yet the boy was attacked by severe fever, collapse, followed by death thirty-six hours later. A post-mortem showed lobular pneumonia, double acute hæmorrhagic pyelonephritis, peritonitis, dilatation of the ureters. A blood-culture of *B. pyocyaneus* was obtained from the heart-blood, the abscesses in the kidney, and urine. No stricture was found. There was a well-pronounced hyperæmic condition of the spinal cord in the sacral region, degeneration of the anterior horn cells, and a doubling of the central canal in the same region. He regarded this poliomyelitic lesion in the cord as the primary cause of the retention, and considered that this case was a further undoubted evidence for the existence of a bladder centre in the sacral region. As to the infection it was presumably introduced by the catheter into the enormously dilated bladder. The condition of this organ, the dilated ureters, and the weakly condition of the child favoured the spread of the infection. M. D. EDER.

Cystitis in nurslings ('*Riv. di Clin. Pediat.,' April*, 1907).—**Caccia** speaks of cystitis in nurslings as of frequent occurrence. The symptoms of fever, pain, and turbid acid urine, abounding in bacteria and agglutinated leucocytes, odourless and containing little albumin, are confused with the same appearing in gastro-intestinal disturbances. The author does not view the cause as of hæmogenic or transcolic origin, but as an ascending infection *per urethram*. Satisfactory treatment is secured by medicaments, such as hexamethylene-tetramine and its compounds. J. HOWELL EVANS.

Pathology.

The ætiology and pathology of rickets (*'La Pediatria,' September, 1907, p.* 641).—**A. Jovane** and **S. Forte,** from a number of experiments on rabbits, some inoculated with fæcal matter from rickety children and others with that from non-rickety children suffering from acute gastro-enteritis and diarrhœa, arrive at the following conclusions: (1) The alterations in the bones produced by both these inoculations resemble the true rachitiform dystrophy. (2) Aqueous and alcoholic extracts of fæcal matter, inoculated at intervals of a few days, either intra-venous or subcutaneous, if given in not too large doses were well borne by young rabbits, and the authors obtained fourteen dystrophic rabbits out of sixty-nine. (3) Alcoholic extracts are more active than watery; mixed extracts gave negative results. (4) The changes observed in the rabbits correspond clinically and anatomically to those of rachitic children. (5) The amount of lime salts in the bones of the dystrophic rabbits is markedly diminished. (6) With regard to the ætiology and pathology of rickets the authors are inclined to believe from the results of their experiments that absorption of toxic intestinal products has a great influence on it. That while this theory must be admitted, it does not, however, represent in all cases the only morbid agent. They are of opinion that the disturbance of organic mineralisation in the rachitic and the consequent bony lesions must be of the nature of a tissue change which may result from many causes, the most definite of which is chronic intestinal intoxication favoured by special individual predisposition, inherited and acquired. (7) With regard to the nature of the morbid process, the authors incline to the opinion of Pommer and Heubner, *i. e.* an arrest of the function of the transformation of osteoid material into bone, rather than that of Spillmann and Kassowitz, that it is an inflammatory process. The paper is illustrated and a full bibliography given. In relation to these researches it is interesting that George Carpenter, in a paper on **Splenomegaly in Infants and Young Children** (*'Reports of The Society for the Study of Disease in Children,' vol.* III, 1902–1903, *p.* 306), states: "Rickets is not a disease the main feature of which is characterised by passive deprivation of the lime salts alone, but a strong feature of rickets is the active *overgrowth* of the cartilaginous growing ends, undue activity in the production of the scaffolding suited to a good building with the deposit of jerry-built walls. This undue activity at the growing ends and beneath the periosteum suggests an irritant, whatever may be the explanation for a temporary deficient ossification and undue softness of the bones—of an irritant which is probably manufactured in the intestines and is carried by the blood-stream to the skeleton." VINCENT DICKINSON.

Spirochætes in acute lymphatic leukæmia and in chronic benign lymphomatosis (Hodgkin's disease) (*'Journ. Amer. Med. Assoc.,' August* 31 *and September* 28, 1907).—**Proescher** and **White** describe a spirochæte which they found in the lymphatic glands in three cases of Hodgkin's disease and in one of acute lymphatic leukæmia, by using Levaditi's method and staining with Giemsa solution. The organisms were 20 μ long with wide turns and pointed ends, thus differing considerably from the *Spirochæta pallida.* The clinical characters of a number of lymphatic hyperplasias has for a long time suggested an infectious origin, and the fact that in these four cases the same organisms were found in the same relation to the morbid tissues as the *Spirochæta pallida* to syphilitic lesions is a point of importance which may well be followed up.

T. R. Whipham.

Lymphocytosis of the cerebro-spinal fluid in congenital syphilis and its diagnostic significance ('*Jahrb. f. Kinderheilk.*,' 64, i, 1).—**Iobler** details important results in the cytology of the cerebro-spinal fluid in congenital syphilis. In 14 cases in which syphilis was known or suspected he found a decided lymphocytosis in 12 cases (85·7 per cent.). In 1 case the result was negative, and 1 case was rejected as uncertain. An increase of albumin was present five times in 7 cases examined. He concludes, therefore, that characteristic changes in the cerebro-spinal fluid are a frequent indication of inherited syphilis, their frequency being only a little behind those met with in acquired syphilis. J. E. Bullock.

The brain weight of children ('*Monatschr. f. Kinderheilk.*,' *April*, 1907, *S.* 9).—**Paul Michaelis** has carefully weighed the brains of 276 children. He gives here the detailed results, which are of great value for those making similar investigations. Ernest Jones.

Therapeutics.

The treatment of infantile diarrhœa by gelatine ('*La Clin. Infant.*,' *November*, 1907, *No.* 22, *p.* 703).—**Péhu** gives large doses—10 to 25 and even 30 grms.—of sterilised gelatine solution 10 per cent. in the bottles; at least 12 grms. must be given every twenty-four hours. It has the advantage of being without taste or smell. The author administered it in summer diarrhœa, in gastro-enteritis due to improper feeding, in simple gastric dyspepsia due to defective digestion accompanied by spasm of the pylorus, in dysenteric entero-colitis with bloody stools, more frequent in the second than in the first year of life. Very soon the stools diminish in frequency and in number and become more consistent, the fœtid odour becomes less and the colour less green. At the same time the general condition improves. The amelioration is sometimes temporary, but on re-commencing the treatment it is soon re-established. Vincent Dickinson.

Buttermilk in pathological conditions of early infancy ('*Lyon Médicale*,' *November*, 1907, *No.* 46, *p.* 803).—**Péhu** administered buttermilk in 29 cases, with success only in 9, *i. e.* a little more than 30 per cent.; in 16 cases the result was unfavourable. In premature and weak children buttermilk was not tolerated and caused green diarrhœa and vomiting. After acute digestive disorders, cholera, and toxi-infections, even after treatment during several days by watery diet and vegetable broth, buttermilk was badly borne. The majority of observers are in agreement on this point. One of the principal signs of intolerance for buttermilk was the more or less rapid occurrence of fever. In cases of marasmus the gastric or intestinal atrophy and glandular alterations seemed too pronounced to allow the digestion and assimilation of such a complex substance as buttermilk. Vincent Dickinson.

The treatment of evanescent erythema (dartre volante) in children ('*La Clin. Infant.*,' *November* 1, 1907, *No.* 21, *p.* 672).—**Sabouraud** says that this affection is sporadic and epidemic. In the former case the child derives the germ from the impetiginous crusts on the nose, which are often chronic, or from a post-auricular impetigo. In the epidemic form it is found in schools on 10, 30, or 100 children, chiefly as a commissural intertriginous impetigo, of streptococcic origin, which is transmitted from child to child by their bitten penholders. Finally this streptococcic evanescent erythema is seen as a fresh element superimposed on a true oozing impetigo, of which it is either the final stage or a sequel. The treatment is simple, for the lesion is relapsing rather than obstinate and can be cured with this ointment: Calomel, tannin āā 0 30 grms., vaseline 30 grms. This treatment is very efficacious. In sporadic cases the relapses are generally more frequent because the child is the subject of a chronic impetigo which must be tracked out, and treated, either in the hairy scalp (pedicular), or post-auricular, nasal, or commissural. It is advisable in this case to add to the water used for washing the face a table-spoonful per quart of the following: Sulphate of zinc 7 grms., sulphate of copper 3 grms., and camphorated distilled water 300 grms. Red faces with shrivelled and finely scurfy skin seen in children are due to abuse of soap—a frequent occurrence, and may be cured with a mild oxide of zinc cream. VINCENT DICKINSON.

Surgery.

Ophthalmia neonatorum (Ophtalmie purulente des nouveau-nés) ('*Ann. de Med. et Chir. Infantiles,*' 1er mia, 1907).—**Joland,** in a general review on ophthalmia neonatorum, agrees with the general view, namely, that infection of the baby's eyes usually occurs when the lids are first opened—that is to say, after the head has been born. The disease occupies the foremost rank as a cause of blindness—one third (Rochard); 13,900 among 38,000 (Truc and Valude); one fourth (Trousseau); and 30 per cent. (Fuchs). Other figures quoted by Joland are—111 damaged eyes among 507 babies seen by Galezowski with opthalmia neonatorum; Chevalleraut, among 157 children received at the Braille School, found that 57 (36 per cent.) had been blinded from ophthalmia neonatorum; Trousseau, at the Quinze-Vingts, found 29 cases among 627 inmates. The statistics of the Institution des Jeunes Aveugles give a proportion of 34 per cent. Trousseau, at the Braille School, found 100 of the 229 inmates blinded by ophthalmia neonatorum. Lastly, Dehenne, among 100 babies affected with purulent ophthalmia, declared that 35 to 40 remained irremediably blind. With regard to prophylaxis, Joland believes that when the mother has been treated for slight leucorrhœa during pregnancy, and the injections have been continued during labour, it generally suffices to cleanse the baby's eyelids with absorbent wool before the cord is tied, and then to irrigate them freely with sublimate or boric lotion. It is only in cases of virulent vaginal discharge that to those measures should be added the instillation of silver nitrate, 2 per cent., or the insufflation of powdered iodoform. The isolation of affected babies is recommended—at all events when the confinement has taken place in a public institution. As to the efficacy of prophylaxis, the well-known figures are quoted of Bischoff, Konigstein, Crede, Reymond, Sevray, Alvarado, and Olshausen. Some figures are quoted to show the efficacy of treatment with silver nitrate. For example, in 108 cases of recent ophthalmia treated in that way, Horner lost no single eye. Hirschberg had more than 200, among which six had already sustained corneal damage when presented for treatment. The other 194 cases, however, were completely cured. Schweigger, among 452 cases, found 123 with corneal mischief, but, despite this serious complication, 43 eyes only were lost, while the other 329 cases, treated from the beginning, were cured. Joland glances at the various measures taken in Germany, Austria-Hungary, Switzerland, America, and France, to prevent and to treat ophthalmia neonatorum. In the last-named country the notification of the disease has been obligatory since the year 1892. A combination of the various measures, as notification, instruction of the public, distribution of cautionary notices to those who register a birth, medical visits to women who have been confined by a midwife, and so forth, appears to the author to be desirable. The proposal of Colmenares, to enlist the services of the lay press in making the dangers of the disease known to the public, is mentioned with approval. "*Qui sait, si,*" writes Joland, "*quelque jour, un auteur dramatique ne nous prêtera pas, comme dans la lutte contre la syphilis, un fort coup d'épaule ?*" Sydney Stephenson.

The treatment of tubercular abscesses ('*Amer. Journ. of Orthop. Surg.*,' *July*, 1907).—The consideration of a series of cases has led **Young** to the following conclusions: A certain number of cases will subside under thorough protective treatment and will not require incision. Exploratory puncture of joints and of the abscess preceding any operation should be made early for diagnostic purposes. The method of operation should then be based on the microscopical report. If the abscess is sterile it should be thoroughly incised, scraped, and closed without drainage with the strictest aseptic precautions. When large numbers of tubercle bacilli are found the incision should be cauterised before the sac is incised. The abscess should then be thoroughly scraped and the wound partially closed, a drain being left in for not more than forty-eight hours. If the cultures show a mixed infection the abscess should be scraped and irrigated with a formalin solution and the wound drained for the first day or two. Cultures should be taken from sinuses, and if there is no growth the sinus is to be treated by complete immobilisation of the tuberculous area with partial closure and drainage for a short period. If tubercle bacilli are present the part should be thoroughly scraped, immobilised, and treated with a saturated solution of methylene blue. When the cultures show a mixed infection the sinus should be well scraped, the affected part immobilised, and the general condition treated by serum therapy. T. R. Whipham.

Pneumococcal peritonitis in childhood ('*Berliner klin. Woch.*,' *No.* 46; '*Arch. f. Kinderheilk.*,' 46, 3 *u.* 4).—**A. v. Koos**, as the result of observations in the Stephanie Children's Hospital in Budapest, is of opinion that the peritoneal lesion caused by the pneumococcus is a relatively rare disease which occurs mostly in girls, and in its morbid anatomy entirely corresponds with the general purulent pneumococcal peritonitis met with in peritoneal lesions otherwise produced. "Encysted peritonitis" is characterised by exhibiting at the commencement the clinical picture of an acute peritonitis, followed shortly by a chronic stage with relatively trifling signs of peritonitis. Pathologically there is a large, characteristic, fibrinous exudation which early leads to adhesions and thus to a limitation of the process. The typical course of the disease, and the distinctive nature of the pus, which is thick, rich in fibrin and of a yellowish-green tint, render possible a probable diagnosis, which is made certain by the bacteriological condition. The prognosis is quite favourable in the encysted form, especially as regards operative interference. The treatment is by operation, and is dependent on the presence of a fluid exudation. J. E. Bullock.

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Original Articles.

A NOTE ON CONGENITAL SYPHILITIC "OSTEITIS DEFORMANS."

By F. Parkes Weber, M.D., F.R.C.P.,
Physician to the German Hospital, London, and the Mount Vernon Hospital for Consumption, Hampstead.

A peculiar and very unsightly chronic general enlargement of certain long bones, especially of the tibiæ, is an occasional, though rare, late manifestation of congenital syphilis. It is due to a chronic osteo-periostitis, which may be extraordinarily painless, so that medical advice is not always so urgently sought for and acted on as one would expect from the deforming nature of the malady. The tibiæ are most frequently affected in this way, but other bones, such as the ulnæ and lower jaws, may also be involved, though usually to a lesser extent than the tibiæ. Both sides of the body are (as in the osteitis deformans of Paget) generally affected, but the changes are often more advanced on one side, and, indeed, one leg may remain sound even when its fellow is greatly deformed.

This remarkable condition in the bones may occur in association with various other manifestations of congenital syphilis, as it did in a case recently shown by Dr. Porter Parkinson,* in which, besides the enlargement of the tibiæ, there were several other signs of the disease including infantilism (The Society for the Study of Disease in Children, February the 21st, 1903). In some cases, however, it may, for a considerable time at least, constitute in itself practically the only evidence of the syphilitic taint. An excellent example of this has been described and figured by Mr. R. W. Parker in his article on "Syphilis" in Gould and Warren's 'International Text-book of Surgery' (edition of 1900, vol. ii, p. 780). The patient in question, whom I had myself frequently an opportunity of seeing when he was under treatment at the German Hospital, was a Jewish boy, aged fourteen years, with enormous enlargement of the bones of both legs and to a lesser degree of both ulnæ. The boy looked as if his legs below the knees were too long (as well as much too thick) in comparison to his thighs and the rest of his body. Mr. Parker says that he had normal eyes and well-formed teeth, and was the eldest of seven children and the only one affected. The history as to syphilis was completely negative. Neither parent showed any syphilis. The father was only seventeen years old and the mother only nineteen when they were married. The boy himself seemed normal, though somewhat pale, up to the age of seven years, when the bone affection began to show itself. Since that age the deformity had slowly increased, and its syphilitic origin had recently been proved beyond all doubt by the appearance of gummata.

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* Exhibited at The Society for the Study of Disease in Children, February the 21st, 1908.

The painless and consequently insidious course of the affection was most remarkable. In this respect the bone-condition may be compared to the chronic splenomegaly which occurs as a late manifestation, and sometimes apparently as the only manifestation of congenital syphilis. But there is considerably more doubt as to the exact nature of the splenic change and its relation to the syphilitic taint. Much investigation is still required in regard to the pathological anatomy and clinical diagnosis of congenital syphilitic splenomegaly.

The enlargement and curvature of the tibiæ from congenital syphilitic osteitis deformans is likewise well shown in the illustration to a paper by J. Basil Hall, entitled, "A Case of Syphilitic Fibro-spongioid Osteitis." * In Hall's patient, a boy, then fourteen years old, aching pain in the legs at night, especially in the right leg, was, however, complained of, and there was a history (though not a typical one) pointing to congenital syphilis. The mother, by her second husband, had had five children, of whom the patient was

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* 'British Medical Journal,' June the 30th, 1900, p. 1575. Hall takes the term "fibro-spongioid" from J. Parrot's description of the osseous lesions met with in congenital syphilis, and refers to Parrot's address on the subject to the Pathological Society of London in May, 1879. In vol. xxx of that Society's 'Transactions' (p. 343), Parrot divides the osteophytic changes of syphilitic bone disease according to the hardness of the osteophytes into two classes: (1) Osteoid; and (2) fibro-spongioid.

the eldest. The second and third children died in infancy, and the fourth and fifth were still-born. The patient had had snuffles very badly as an infant, was a sickly child, and did not walk till he was five years old. He had, however, had no rash at any time except measles. Bending of the bones of the legs commenced about eighteen months after he began to walk. Both clavicles were much thickened in the inner half. There was no sign of rickets. The tibiæ were greatly enlarged and appeared to be elongated in proportion to the rest of the limb, the right tibia being slightly the longer of the two. In addition to the general enlargement they presented also irregular bossy swellings on their surface. Both bones were curved convexly forward in the middle. Hall points out that in his patient the convex curve of the tibiæ is situated in the middle segment (sabre-shaped tibiæ of Fournier) rather than in the lower segment, and thus differs from that commonly seen in rickets.

Amongst other interesting examples of congenital syphilitic osteitis deformans I shall shortly refer to cases described by Hans Lorenz and Fritz Spieler. Lorenz's patient [*] was a girl, aged 11 years, whose mother had been infected with syphilis shortly after her marriage. The girl's right tibia was enlarged, not only very much in thickness but also in length. It was 5 cm. longer than the left tibia and bowed, owing, doubtless, to its growth having been more rapid than that of the fibula, which was only 2 cm. longer than the left fibula. There was pes valgus on the right side owing to the tibia being longer than the fibula. Characteristic, in this case, was the insidious progress of the osteitis deformans. Since her fifth year of age the girl had occasionally complained of merely slight pains in her right leg. There was a history that two other children of the same parents had suffered from a similar chronic and not very painful tibial disease.

Spieler's patient [†] was a child, aged 12 years, with bone-disease of about five years' duration due to congenital syphilis. The right leg below the knee was 5 cm. longer than the left one, and it measured 3 cm. more than its fellow in its maximum circumference. The tibia was enlarged generally, but also presented local irregular protuberances on its surface; it had the characteristic "sabre-like" bend with convexity forwards. As in Lorenz's case, and for the same reason, there was pes valgus on the affected side. Some of the other long bones showed changes of similar nature.

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[*] Abstract in 'Münchener med. Wochenschrift,' March the 29th, 1904.

[†] *Ibid.*, January the 10th, 1906.

The osteitis deformans of congenital syphilis may be distinguished from Paget's osteitis deformans by the following considerations:

(1) The youthful age of the patients in the congenital syphilitic cases.

(2) The relative absence of pain in the congenital syphilitic cases. In Paget's bone-disease the suffering may be extreme and resistant to medical measures, including anti-syphilitic treatment.

(3) The favourable result obtained in the syphilitic cases under proper specific treatment.

(4) In the syphilitic cases the tibiæ are most severely and most frequently affected. In Paget's osteitis deformans the disease, I believe, not rarely first shows itself in one of the femora.

(5) In the syphilitic cases, in addition to general enlargement, the affected bones often present irregular bosses on their surface.

(6) There is no evidence, as far as I know, of any tendency for malignant tumours to supervene in the bones of the syphilitic cases, as there is in the bones of Paget's class of cases.

(7) In the former class of cases there may, as I have already stated, be other obvious signs of congenital syphilis present.

Nevertheless the resemblance between the syphilitic cases and Paget's cases is in some instances and in some respects very striking, and it is not surprising that by certain writers a syphilitic origin has also been suggested for Paget's osteitis deformans. It must, indeed, be admitted that some cases classed as Paget's bone disease may really be due to congenital or acquired syphilis, but typical cases of Paget's class are not cured, and the pains even may not be removed, by anti-syphilitic treatment. However, in a few examples of true osteitis deformans of Paget, a connecting link with syphilis may be furnished by the presence of a chronic post-syphilitic disease of the spinal cord, such as tabes dorsalis,* and in such cases the trophic disturbance caused by the affection of the nervous system may play a part in the development of the bone disease.

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* See "Ostéite syphilitique déformante, type Paget," by Chartier and Descomps, 'Nouvelle Iconographie de la Salpêtrière,' 1907, No. 1, p. 84. See also Gilles de la Tourette and Magdelaine, 'Nouvelle Iconographie de la Salpêtrière,' 1894, No. 1; and Gilles de la Tourette and Marinesco, *ibid.*, 1895, No. 4; also Medea and Da Fano, 'Il Morgagni,' 1906, No. 6.

SOME LATE EFFECTS OF INHERITED SYPHILIS.*

By J. Porter Parkinson, M.D.,
Physician at the Queen's Hospital for Children, etc.

The following case illustrates in a remarkable way some late results of inherited syphilis, so that though the patient was an adult it seems worthy of being reported in a journal devoted to diseases of children. Esther B—, aged 21 years, had a family history suggesting syphilis, as seven out of a family of fifteen died in infancy, but her mother had no miscarriages. When eight years old she had an affection of the eyes—probably interstitial keratitis—of which some traces remain as corneal opacities. She came to the hospital for pain and swelling of the knees and elbows and pains in the bones. The catamenia had never appeared. She was thin, anæmic, of a *café au lait* complexion, and poorly developed, looking like a girl of fourteen. She has all the signs of infantilism: the breasts are undeveloped, there is no hair on the pubes, and on rectal examination the uterus was found to measure only ¾ inch in length and no trace of the vaginal cervix could be felt. There are some unpigmented scars on the trunk, and on the forehead is a depressed scar, at the base of which the bone is depressed and irregular. The mucous membrane of the lips is not scarred, but the upper central incisors are pegged. The thoracic and abdominal organs appear normal, and the spleen could not be felt. The quantity of urine varied from two to three pints daily, sp. gr. 1010 to 1015, acid, and containing from three fifths to a cloud of albumin and many fatty and granular casts. There was marked thickening of both tibiæ and ulnæ, causing general enlargement of the whole shaft of the bones, but the proportionate length of the bones was not altered and there was no definite bending; there was also slight enlargement of the lower ends of the femora. All these bones were distinctly tender on handling. The other bones, including the fibulæ and radii, were normal. Both elbow- and knee-joints were distended with fluid, and their synovial membranes were thickened, and some movable hard bodies could be felt in the right knee-joint; all these joints were tender on movement, and the movement of the right elbow was much restricted by shortening of the biceps tendon and of the supinator longus. This was attributed by the mother to constantly nursing infants on the right arm. The fundi of the eyes were normal. Her mental condition was below normal, and as a child she had never played with other children, but had been content to constantly nurse the younger members of the family.

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* Exhibited at The Society for the Study of Disease in Children, February the 21st, 1908.

She has been treated with mercurial inunctions, with the result that the tenderness of the bones has disappeared and the albuminuria has lessened, and some slight œdema which was present at first has disappeared. The fluid in the knee-joints has much diminished, especially in the left, which has been simply strapped, while the right one, which was strapped over Scott's dressing, has not lessened to the same extent.

Skiagrams show what remarkable thickening of bone may sometimes be produced, and demonstrate complete absence of any such change in the fibulæ.

In some instances the late effects of inherited syphilis are chiefly focussed in the joints, causing sometimes simple effusion, and sometimes an accompanying thickening of the synovial membrane. Occasionally only a single joint is affected. When this is the case the disease may be mistaken for traumatic synovitis or tubercular arthritis, and the joint be fixed on a splint for many weeks or months, leading to a permanent impairment of its usefulness. In all such cases where this mistake is possible, a careful general examination should be made, and as a rule some other evidence of inherited syphilis will be forthcoming, and in nearly all there will be found some evidence of syphilitic periostitis of the tibiæ, which almost invariably accompanies syphilitic disease of the knee-joints. The examination of the corneæ for opacities due to previous keratitis, and of the fundi of the eyes for retinal or choroid changes, should never be omitted.

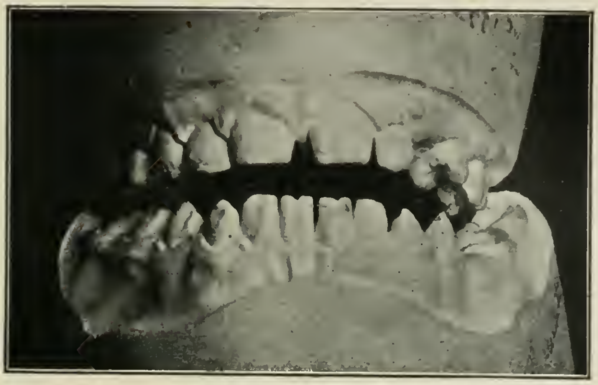
THE "NOTCHING" OF LOWER PERMANENT INCISORS IN CONGENITAL SYPHILIS.

By C. Edward Wallis, M.R.C.S., L.R.C.P., L.D.S.Eng.
Assistant Dental Surgeon King's College Hospital; Dental Surgeon Victoria Hospital for Children, Chelsea; Vice-President Chelsea Clinical Society, etc.

In view of the fact that little or no mention is made of this condition in any of the current surgical text-books with which I am acquainted, an account of a case in which the notching of the lower permanent incisors is well marked, and, at the same time, associated also with other perfectly definite signs of congenital syphilis, may be of interest.

The patient is a boy, F. W. F—, aged 12 years, who has been coming to me at the Victoria Hospital, Chelsea; he has well-marked interstitial keratitis of both eyes besides a definite history of congenital syphilis.

The following photograph shows very well the condition of his teeth.



The upper central incisors present the characteristic spacing between one another and their adjacent lateral incisors; the well-known typical shape is shown and also the notching of the cutting edge, but as this does not extend completely antero-posteriorly it does not show either in a photograph of the boy himself or in the above photo of the model of his teeth, though in a good light it can be plainly seen in the teeth themselves.

The particular point of interest in this case is the "notching" of the lower central incisors, together with the general diminution from the normal size which characterises the typical Hutchinsonian upper incisors, so that they are exactly comparable.

The notching of these lower incisors is plainly due to an arrest of development and not to any adventitious cause occurring during or after their eruption.

The pathology, as far as we understand it, is exactly the same as in the case of the upper incisors, namely an incomplete development of the sides of the crowns of these teeth leading to a rounding of the angles at the cutting edges and a suppression or imperfect development of the central tubercle, which is usually clearly shown when a normal tooth first erupts.

I believe that this "notching" of the lower permanent incisors in congenital syphilis occurs fairly frequently, but owing to its non-mention in the current surgical works little or no attention is given to the condition or shape of these teeth. I myself have at present three such cases under my care, and one may hope, perhaps, that further observation may be made by others with a view to finding out the percentage of cases of congenital syphilis in which the condition is shown.

SYPHILITIC NEPHRITIS.*

By Leonard Guthrie, M.D., F.R.C.P.,
Physician at the Hospital for Epilepsy and Paralysis and Physician at the Paddington Green Children's Hospital.

I regret that I have no original observations on this subject to bring before the Society. I shall only attempt to discuss whether we are justified in attributing certain forms of nephritis in infants and young children to syphilis exclusively.

The renal conditions which have been regarded as syphilitic are mainly those of an interstitial nephritis with a varying degree of parenchymatous changes.

In recent cases the kidneys may present no morbid appearance to the naked eye, but on microscopical examination the stroma is found to be infiltrated with small cells in scattered areas, together with formation of new connective tissue. The small arteries in the neighbourhood of the glomeruli may be thickened. There may be over-nucleation of the glomeruli themselves. Catarrhal changes may be found in the tubules, which may be blocked by hyaline or epithelial *débris*. Small hæmorrhages may be scattered throughout the organs.

In more advanced stages the kidneys have all the appearances of the granular kidneys seen in adult life. They are distorted and shapeless, often of unequal size. The pelvis is dilated, the capsule is adherent, the cortex thin, the glomerular capsules and blood-vessel walls are thickened, the glomeruli themselves atrophied, the tubules obliterated or dilated in cystic form. Signs of recent interstitial or parenchymatous inflammation grafted on to more chronic conditions are frequent.

I know no instances in infants in which gummata have been found in the kidneys associated with the changes mentioned, but if the signs alone of acute and chronic interstitial nephritis in childhood are regarded as syphilitic, it follows that the precisely similar conditions met with in adults must be syphilitic too.

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* Read at a special meeting of The Society for the Study of Disease in Children for the discussion of "Inherited Syphilis," November the 13th, 1907.

This is a view which I have long been inclined to take, but I must admit that it is non-proven, and lacks sufficient evidence to support it.

I may allude first to cases of nephritis in children undoubtedly syphilitic, several of which have been brought to the notice of this Society already.

Massalongo, of Verona, reported the case of an undoubtedly syphilitic infant which died, aged 8 months, of uræmia. The kidney changes found after death were characteristic of chronic interstitial nephritis in adults.

Coupland and Stroebe have described cases of acute interstitial nephritis in congenital syphilis.

Speiss collected thirty-four cases of congenital syphilis and found that ten had renal disease.

Dr. George Carpenter has related at our meetings the history of two syphilitic and dropsical infants, one aged 5 weeks and the other 5 months. In the one catarrhal changes in the kidneys, with excess of nucleation of the glomeruli and thickening of small blood-vessels were found.

In the younger infant there were no other signs of congenital syphilis, but he regarded the chronic interstitial nephritis present as "doubtless of syphilitic origin."

Dr. Sutherland and Mr. Thomson Walker have also brought before us two cases of syphilitic infants, aged respectively 8 and 12 months. In both marked interstitial changes with catarrhal exudation in the tubules were found, as well as syphilitic endarteritis.

In neither of these cases was dropsy present.

On the other hand, Dr. Ashby has mentioned here an infant which died aged 4 weeks. Anasarca was present from birth, and after death extensive epithelial and fibroid changes, with thickening of small arteries, were noted in the kidneys. There were no signs of congenital syphilis in this case, but Dr. Carpenter thought that the histological appearances supported syphilis.

Emmett Holt collected twenty-three cases of primary nephritis in infants aged from 2½ months to 2 years.

Eleven of these were fatal. Ten post-mortem examinations were held. Five of them showed ordinary parenchymatous nephritis, and five acute interstitial inflammation characterised by small-cell infiltration of the renal stroma and formation of new connective tissue.

Holt does not suggest that any of these patients suffered from congenital syphilis, and it is hardly probable that he would have overlooked evidence of that disease had it been present.

If we turn to children who have died of more chronic forms of interstitial nephritis we must again admit that the evidence of congenital syphilis is far from conclusive.

Dr. James Sawyer, of Birmingham, has carefully analysed twenty-four cases of chronic interstitial nephritis in children and young adults, including seven cases previously recorded by myself.

Two of the number were aged 18 years and the ages of the rest varied from $2\frac{5}{12}$ to 14 years.

In only one, a girl, aged 18 years, positive evidence of syphilis, in the shape of thirty gummata in the liver and one in the spleen, was found. The syphilis was unlikely to have been acquired as the girl had always been delicate from birth and was stunted and undeveloped at the time of death.

Presumptive evidence of syphilis was afforded in one case by the fact that the father was certainly syphilitic. In another, my own case, the only evidence of syphilis was in the fact that the mother had had six miscarriages, and the patient had the recognised appearance and facies of hereditary syphilis.

In the remainder, syphilis is expressly denied in seven cases and not mentioned in thirteen.

I think we can only fairly conclude that although in a certain proportion of cases of acute and chronic interstitial nephritis in infancy and childhood a syphilitic origin cannot be disputed, that there are yet cases in which similar conditions may proceed from other causes.

I am, of course, excluding cases in which a scarlatinal origin has been found—and also those of calculus.

On the other hand, the well-known difficulty in obtaining a history of syphilis in the parent may account for a number of cases in which the causation of the nephritis remains obscure.

I may mention an experience of my own in point. Some years ago I saw in consultation with Dr. Hugh Armstead an infant aged six months. Three months previously it had suffered from iritis of the right eye which was regarded as syphilitic without doubt, although no other signs of syphilis had been present. The iritis cleared up under mercurial treatment, but recently wasting had occurred and incessant vomiting. The urine was scanty and albuminous, containing granular and hyaline and blood casts, and the child died of uræmia a few days later. There was no dropsy at any time. A post-mortem examination was not allowed.

The father positively denied that he had ever suffered from syphilis, and there was nothing pointing to syphilis in the mother or in another healthy child. The mother had had no miscarriages.

At the time I was disposed to doubt the father's word, but possibly I did him an injustice.

But if such cases are not syphilitic, how else can they be explained?

It is possible that some congenital cases may be due to the passage of micro-organisms *via* the placenta into the fœtal circulation.

Cases of congenital jaundice with hepatic cirrhosis which seem analogous to those of interstitial nephritis have been thus explained, and it is certain that these are not necessarily syphilitic.

In other cases it is possible that interstitial nephritis may be secondary to septic pyelitis set up by entry of organisms into the ureters. Such organisms possibly make their way from the bowel to the bladder, thence to the kidneys.

Without doubting that in some instances interstitial nephritis in infancy and childhood is due to congenital syphilis, I think that no case should be regarded as so caused unless other manifestations of hereditary syphilis or a history of them are present.

The only practical suggestion as to treatment which I can offer is, that mercury is a dangerous drug to use in cases of nephritis.

SOME EXPERIENCES AND OBSERVATIONS ON CONGENITAL SYPHILIS IN INFANTS.*

By George Carpenter, M.D.(Lond.),
Chairman of Council of The Society for the Study of Disease in Children; Membre Correspondant de la Société de Pédiatrie de Paris.

(*Continued from page* 48.)

Syphilitic Adenitis.

I have but few observations to make on syphilitic glandular enlargements. There may be found enlargement of some or all of the accessible lymphatic glands in cases affected with chronic "snuffles" or in those suffering from cranio-tabes in addition.

I have not infrequently detected slight enlargements of the epitrochlear glands in syphilitic infants and in those who have excited strong suspicions of that malady. Lancereaux * states that the lymph glands of the abdomen are often found enlarged in those infants with splenomegaly.

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* Read at a special meeting of The Society for the Study of Disease in Children for the discussion of "Inherited Syphilis," November the 13th, 1907.

SYPHILITIC NEPHRITIS IN INFANTS.

Syphilitic nephritis in infants is, I think, of more than passing interest to the physician, not only on account of its immediate danger to life, but owing to its more remote possibilities.

The kidneys, like other organs, have been found diseased in syphilitic fœtuses, and their retarded development has been described by various writers, viz. Stroebe,† Stoerk,‡ and Cassell.§ Speiss ‖ found post-mortem evidence of renal disease in ten out of thirty-four cases of congenital syphilis, and Lancereaux ¶ stated that he found in a nursling of Tarnier's connective-tissue proliferation with fatty degeneration of the epithelium lining the tubuli uriniferi, the organs being of a firm and yellow colour. Coupland ** found in a moribund plump female child, aged 3 months, the kidney cortex the seat of an interstitial infiltration of small round cells, most abundant around the arteries and especially around the Malpighian bodies. The renal epithelium was unaltered. The kidneys "to the naked eye presented a normal appearance." Cassel †† found definite interstitial changes in the kidneys of five infants who survived for some time after birth, in the form of various-sized cellular groups of infiltration in the cortex and cystic degeneration of the glomeruli. In all there was proliferation of the adventitia of the interlobular arteries consisting of polynuclear, mononuclear, eosinophile, and plasma-cells. The process had in no case proceeded to the formation of connective tissue. Of seven specimens taken from syphilitic fœtuses six showed inflammatory interstitial cellular proliferation along with peri-adventitial infiltration. The interstitial changes displayed no features by which they could be distinguished from any other inflammatory process, but the peri-adventitial changes he regarded as of strong diagnostic import.

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* 'Annales de Dermatologie et de Syphiligraphie,' No. 4, 1872–3, "Des affections viscerales de la Syphilis Héreditaire," p. 328.

† 'Centralbl. f. Allg. Path.,' vol. ii, 1891.

‡ 'Wien. klin. Woch.,' 1901, No. 41.

§ "Nephritis in Hereditary Syphilis," 'Berl. Klin. Woch.,' 1904, No. 2.

‖ "W. Die Verschiedenen Mereis Affeckionem bei Syphilis Constitutionales," 'Inaug. Diss. Berl.,' 1877; quoted by Stroebe.

¶ *Loc. cit.*, p. 322.

** 'Trans. Path. Soc.,' vol. xxvii, p. 303, 1876.

†† *Loc. cit.*

Massolongo, of Verona,* reported a case of syphilitic nephritis in a child, aged 8 months, who died with uræmic symptoms. The renal arteries presented marked signs of endo- and peri-arteritis, and the same lesions were found in lesser degree in the liver and spleen. There was connective-tissue sclerosis of the kidneys. The histological changes found were similar to those seen in late renal syphilis (chronic interstitial nephritis), in distinction to those of precocious renal syphilis (parenchymatous nephritis, glomerular nephritis). Although in this case the lesions were of intra-uterine development, the anatomical changes were those of the late adult form of renal syphilis.

In a wasted syphilitic infant, aged 8 months, I found a small gumma in the left kidney and two small gummata in the liver.†

Fruhinsholz,‡ in an important study of ninety-five cases of infantile syphilis, remarks that the kidneys of many syphilitic infants were pale and small, but that they did not usually show well-marked naked-eye changes. He gives several illustrations. In a syphilitic infant of a few weeks old there was thrombosis of the renal veins accompanied by hæmorrhage into the tubes and between them. There was complete apoplexy of one kidney and partial apoplexy of the other. In another syphilitic infant a few days old he found thickening of the intima of certain vessels up to complete obliteration, thickening of the capillary walls with amorphous (amyloid ?) substance, and in one microscopical section a large artery was seen with an amorphous outer coat. He also described interstitial fibrosis, fibrous thickening of Bowman's capsules, enormously thickened tubule walls which appeared to have undergone amyloid degeneration, and small and amorphous Malpighian tufts. Within the tubules were desquamated epithelial cells, becoming granular or changed into an amorphous detritus. In another syphilitic infant, aged 5 months, there were diffuse sclerosis, glomerulitis, and fibrous endarteritis. In a wasted infant, aged 9 months, unsuspected of syphilis, he found in one kidney three little round gelatinous gummata tinged with violet and striated with white, varying in size from a hemp-seed to a small pea. In the other kidney was a similar gumma the size of a pea. Microscopically they consisted of round mononucleated, sometimes polynucleated cells, and here and there some fusiform elements. The tubules were thrust aside by the new growth and filled with round and fusiform cells, and atrophied glomeruli were invaded by round cells. Little lakes of extravasated red blood-corpuscles were also seen. Outside the gummata the kidneys were barely altered.

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* International Medical Congress, Rome, March 29th—April 5th, 1894; 'New York Medical Record,' April, 1894, p. 534.

† 'Syphilis of Children,' p. 52.

‡ 'Revue d'Hygiène et de Médicine Infantile,' No. 1, tome ii, pp. 41–47, 1903.

Pathological examples of the disease in infants have also been exhibited at our Society by Sutherland and Thomson Walker.* In a girl, aged 16 months, the subject of syphilitic arteritis of several main cerebral arteries, they found the interstitial tissue of the kidney cortex (chiefly) densely infiltrated with round cells and the tubules displayed catarrhal changes.

They subsequently examined, post-mortem, the kidneys of a syphilitic girl, aged 8 months, and found similar microscopical changes to those described in their first case.

But all these cases, valuable as they are as pathological records of infantile syphilis of the kidneys, are wanting in that which is of most interest to us at the present moment, viz. a clinical side.

The distinction, however, of being the first to recognise and successfully treat a case of syphilitic nephritis in an infant belongs to S. Messenger Bradley, of Manchester. † The infant was a girl, aged 4 months, " covered with a syphilitic psoriasis of one week's duration." The face, arms, and legs were œdematous and readily pitted on pressure. The urine contained four fifths albumin and numerous epithelial and granular casts. He ordered hydrargyrum c̄ creta gr. ii *bis die*, and a "little" unguentum hydrargyri to be rubbed into the abdomen each night. In the course of three or four days before the action of the drug "the syphilis began to pale and fade away." "After three weeks' treatment the albumin in the urine and the eruption on the skin had entirely disappeared, the cellular tissue was free from dropsy and the microscope failed to reveal the presence of any abnormal element in the urine."

This instructive clinical observation, however, bore no clinical fruit, for during a period of thirty years no cases were recorded by those specially working in children's diseases, or by others, of a frank attack of Bright's disease occurring in a syphilitic infant such as that reported by Bradley.

Henoch, ‡ who was aware of Bradley's case, stated that he could never establish the connection of infantile renal disease with syphilis, but in the face of Bradley's observation he advised that this should be borne in mind.

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* 'Reports of The Society for the Study of Disease in Children,' vol. iii, 1903, pp. 134–146.

† "On Syphilitic Renal Dropsy," 'Brit. Med. Journ.,' February the 4th, 1871.

‡ 'Lectures on Children's Diseases,' vol. ii, p. 170.

My first acquaintance with syphilitic nephritis occurred as long ago as 1889, but it was not published until twelve years later.* It arose in a female infant, aged 5 weeks. She first came under observation with desquamation of the palms, the soles of the feet and the abdomen. There were shallow ulcerations on the lips, also in the gluteal fold from the anus upwards, and there were yellow crusts at the root of the nose and on the ears. On the buttocks were a few umbilicated papules. She had chronic "snuffles." Her mother said a rash appeared at the age of two weeks. She was ordered hydrargyrum c̄ creta gr. i thrice daily. A week later puffiness of the hands was noticed. The following week her eyelids were œdematous, white, and waxy looking. The feet and legs and the hands and forearm were much swollen. The urine was albuminous, and hyaline, epithelial and blood casts were found in it. In spite of mercurial treatment, which was persisted in for a month, she died, and post mortem there was found broncho-pneumonia to account for death, and *the kidneys appeared healthy to the naked eye.* Microscopically, however, the renal changes were decided, and there were both parenchymatous and interstitial alterations. Both were patchy in distribution, and in places the fibro-nuclear infiltration was pronounced (Fig. 7). The fibro-nuclear deposits were most in evidence in the neighbourhood of the glomeruli. The glomeruli were in many instances richly supplied with nuclei; in fact this was the keynote of the glomerular change, but in some few there were other alterations. Thus the following changes were noticed: The Malpighian body was changed, or partially changed into a glassy-looking substance bearing sparsely scattered nuclei; or the substance had a tinge of yellow and a faintly granular aspect; or the combined changes occurred in the same body. In some the faintly yellow exudate was seen in the cavity of the capsule between it and the Malpighian body. The capsule itself was for the most part unaltered, but some capsules were thickened; some had apparently undergone a glassy change, clear or ground glass or a combination of the two. Thickening of the capsule was seen, apart from surrounding fibro-nuclear infiltration, and the merging of a glassy Malpighian body into a thickened capsule was also observed. In one section there was a tiny gumma consisting of a collection of deeply-staining mononuclear cells, small lymphocytes, and larger cells with round, oval, and indented nuclei margined by a small extravasation of red blood-discs.

This, unlike Bradley's case, unfortunately did not respond to mercurial treatment, and was the first on record to be accompanied by a pathological report.

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* 'Syphilis in Children,' p. 56, 1901.

In another child under my care, aged 6 months, who had an extensive and typical syphilide, there was extreme general dropsy with some free fluid in the peritoneal cavity. Slight swelling of the extremities had been noticed for six weeks. A catheter was passed but the bladder was empty. Unfortunately I lost sight of her.* I have also had † from time to time amongst my out-patients syphilitic infants whose urine suggested catarrhal nephritis. But owing to difficulties incidental to out-patient practice they were imperfectly recorded, and they were also soon lost sight of. Cassell ‡ found albuminuria and formed elements in six out of thirty-one syphilitic

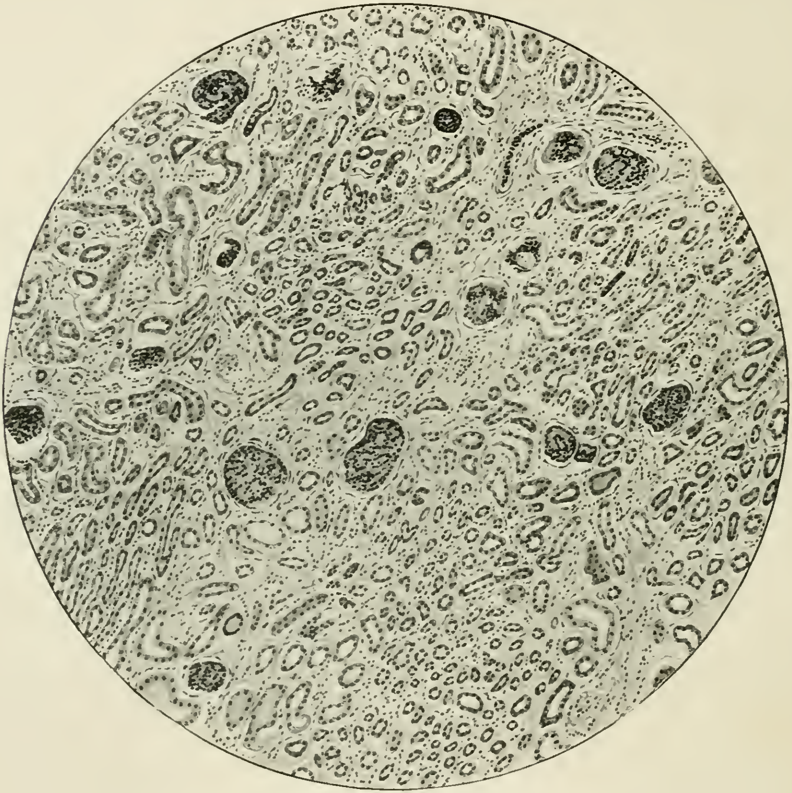

Fig. 7.—Interstitial nephritis in a female infant aged 5 weeks. For description see text. Leitz oc. 1, obj. 4.

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* 'Syphilis of Children,' p. 57.

† 'Reports of The Society for the Study of Disease in Children,' vol. iii, 1903, p. 292.

‡ *Loc. cit.*

infants, but there were no typical examples of Bright's disease among them.

During the last few years our own Society has not been idle, and the 'Reports' contain several records of nephritis occurring in infants. Ashby's * infant, aged 4 weeks, appeared to him to be of the "exact type of scarlatinal nephritis," though he admitted that the suggestion of syphilis which I made at that time was worthy of consideration.

Referring to the cases of nephritis in infants that I have exhibited to the Society, one case was that of a syphilitic infant,† aged 5 months. He suffered from dropsy during life and passed albuminous urine containing hyaline, epithelial, and granular casts and red blood-corpuscles. In spite of mercurial treatment (hydrargyrum c̄ creta gr. i, thrice daily) continued for a month he died. Microscopically there was patchy catarrhal nephritis (Fig. 8).

Another example ‡ was that of a dropsical infant, aged 5 weeks, with ascites and with albuminous urine. No microscopical examination of the urine was made. There was neither history nor stigmata of syphilis, and spirochætes, being then unknown, were not searched for. He lived five days. After death there was found broncho-pneumonia and collapse of the lungs. There was clear fluid in the abdomen with adhesions between the liver and the abdominal walls. The spleen was twice the natural size. The kidneys showed the following changes: The glomeruli were shrunken and almost hidden by nuclei of proliferated endothelium. The epithelium of the convoluted tubes was mostly broken down into granular detritus, though in some places the cells still lined the walls of the tubes, but their nuclei stained very feebly. In a few tubes there was very active epithelial proliferation, especially in the neighbourhood of the glomeruli. The interstitial tissue also showed much cellular infiltration in the same situation, the combined lesions producing prominent microscopic objects (Fig. 9). A striking feature was the large numbers of lymphocytes and other leucocytes in the veins and capillaries of the liver. Some of the portal canals showed cell infiltrations, lymphocytes, and multinucleated leucocytes extend-

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* "A Case of Nephritis in a Newly-born Infant," 'Reports of The Society for the Study of Disease in Children,' vol. i, p. 129.

† "A Case of Syphilitic Nephritis in an Infant, aged 5 months," 'Reports of The Society for the Study of Disease in Children,' 1902, vol. iii, p. 286.

‡ "Interstitial Nephritis and Cirrhosis of the Supra-renal Capsules in an Infant, aged 5 weeks," 'Reports of The Society for the Study of Disease in Children,' 1906, vol. vi, p. 258; 'Lancet,' November the 3rd, 1906.

ing between the adjacent liver-cells (*vide* Fig. 6, p. 47). There were also changes in the supra-renal capsules (see p. 103).

My last case occurred in a boy, aged 3 months.* Obvious signs of renal disease commenced at 2½ months of age, and were preceded by "snuffles" which occurred somewhat earlier. The urine was albuminous and contained coarse and fine granular casts, hyaline casts with kidney cells therein, kidney epithelial cells, pus corpuscles, and a few red blood-cells. No spirochætes were found. In spite of mercurial treatment the abdomen filled with fluid and he died three weeks later. Post mortem there was extensive pneumococcal peritonitis.

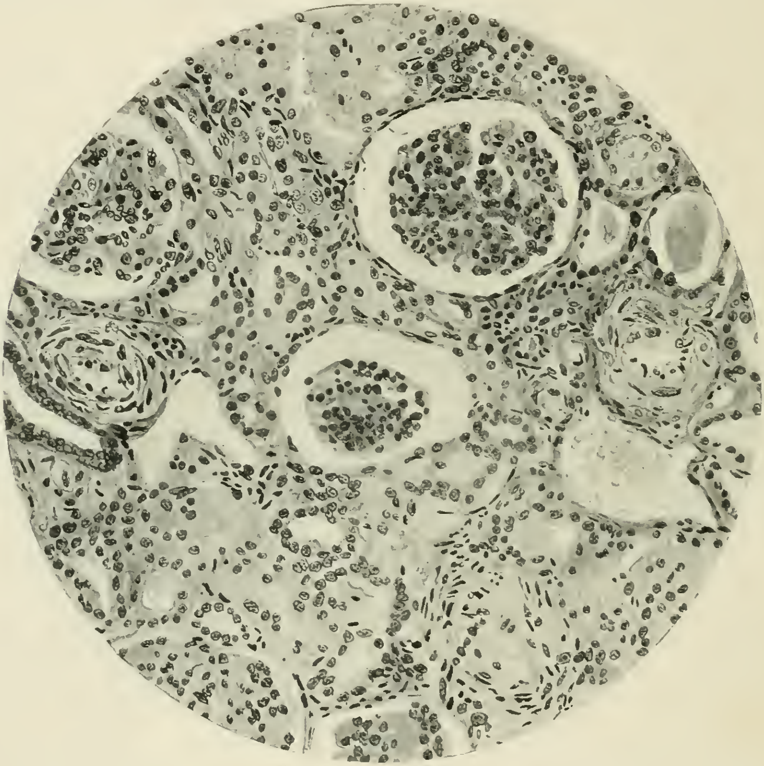

Fig. 8.—Tubular nephritis with prominent interglobular arteries in a syphilitic infant aged 5 months. Leitz oc. 3, obj. 7.

Microscopically the following changes were detected in the kidneys: There was distinct evidence of catarrhal nephritis and the tubules were in places dilated. Scattered areas of interstitial changes were seen from a simple round-celled infiltration, consisting of small lymphocytes and plasma-cells, to a decided fibrosis. Various changes were detected in the Malpighian tufts (Fig. 10). The bulk of them were natural, but others showed varying degrees of hyaline degeneration, in some amounting to complete destruction, and others displayed a shrunken, glassy, slightly nucleated tuft enveloped by a similar substance in the cavity of Bowman's capsule.

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* "Syphilitic Nephritis in an Infant," 'Reports of The Society for the Study of Disease in Children,' vol. vii, p. 48; also pp. 286, 287.

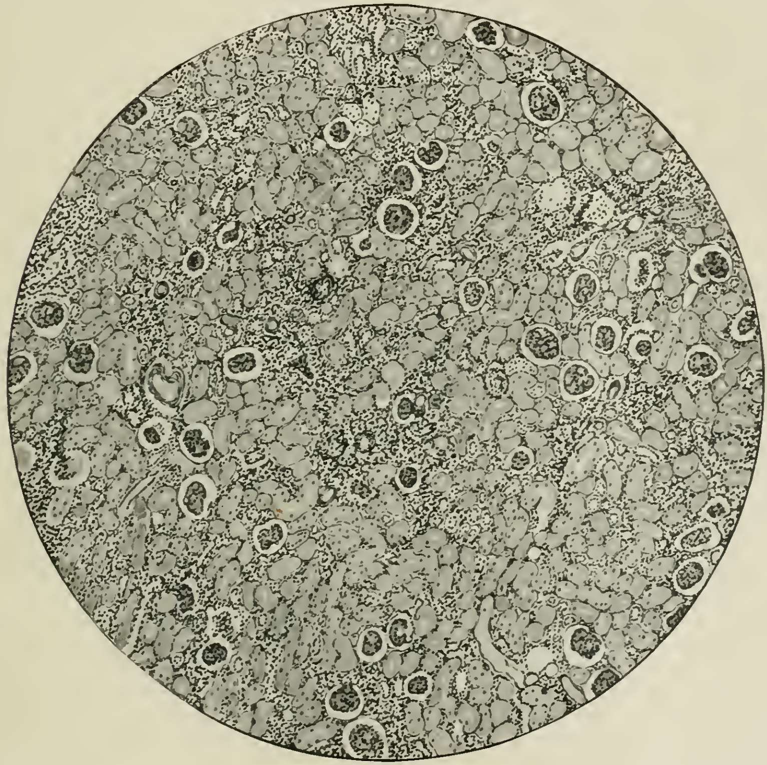

FIG. 9.—Catarrhal and interstitial nephritis from an infant aged 5 weeks (*vide* Fig. 6). Microscopical section of the liver removed from the same patient. For description see text. Leitz oc. 4, obj. 3.

For the most part the capsules were unaltered, but in some fibronuclear thickening was detected. This invaded the tufts, there being in some a general fibrosis. A combination of thickened capsule and hyaline degeneration of the tuft was occasionally noted.

When examining the microscopic sections of the kidneys of these various infants one has been at great pains to determine whether or not the interglobular and afferent or other vessels had altered.

These small arteries were found to be thick walled and generously nucleated, and the impression left on the mind was that they had undergone pathological changes (*vide* Fig. 8). But on comparing them with normal infantile renal arteries of the same calibre it was seen that the above appearances must be recognised as normal. So, too, the condition of the arterial endothelium. The nuclei of this membrane are naturally prominent. But in some vessels they appeared to have undergone decided proliferation, though here, again, it was felt to be impossible to arrive at any satisfactory decision.

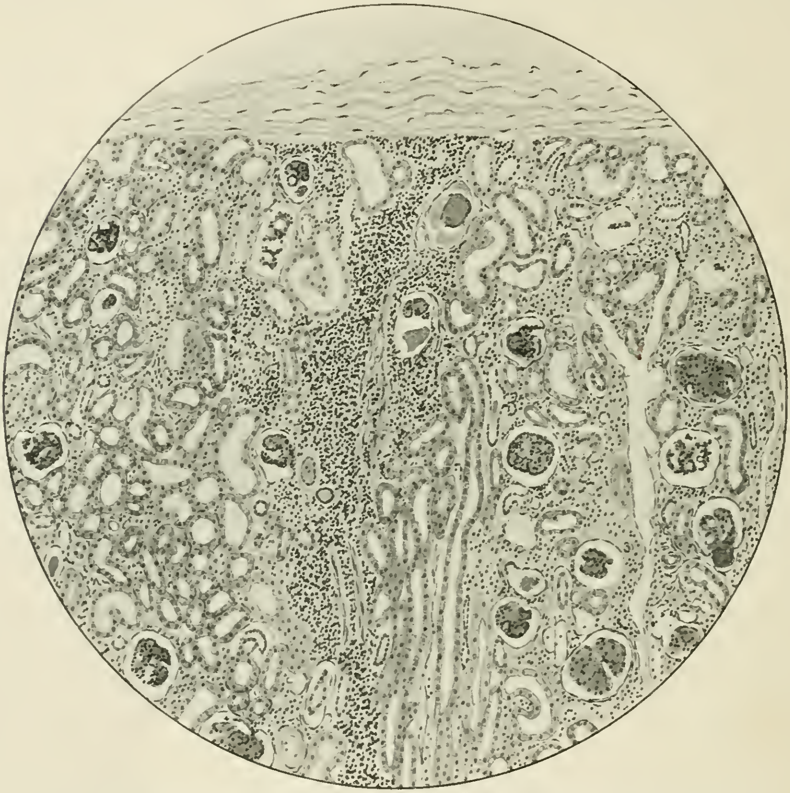

Fig. 10.—Catarrhal and interstitial nephritis in an infant aged 3 months, showing changes in the tubules, glomeruli, and cellular infiltration of the interstitial tissue. For description see text. Leitz oc. 1, obj. 7.

I have elsewhere * drawn attention to the fact that to the *naked*

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* "Nephritis in Infants," 'Reports of The Society for the Study of Disease in Children,' 1907, vol. vii, pp. 277–288.

eye the kidneys of infants with nephritis often appear normal, and I think that this is a fact which should be borne in mind.

There can be no longer any room for doubt that the syphilitic virus produces both parenchymatous and interstitial nephritis, in combination or separately.

And it appears that in the infantile stages of the disease—both intra- and extra-uterine—parenchymatous inflammation is not only not unusual, but that this lesion may alone be found at the post-mortem examination. On the other hand, when the typical products of parenchymatous inflammation are found in the urine, it must not be assumed on that account that the stroma is intact.

But as I have elsewhere* pointed out the observations of Fry and Martin † tend to prove that interstitial and combined interstitial and parenchymatous inflammation of the kidneys arise from other than syphilitic toxines. "If that be so another explanation than the syphilitic one is afforded of the origin of the cirrhotic kidney. The possibility also of the seeds of the cirrhotic kidney being sown in infant life must not be overlooked, as also of its origin in intestinal and other toxines." That nephritis, in some cases, commences in intra-uterine life there can be now no question.

THE SUPRA-RENAL CAPSULES.

The supra-renal capsules are found diseased in some syphilitic fœtuses—about one in eight. These have been noticed larger than natural by Virchow, Hecker, and others.‡ In some cases the increase in size has been due to disseminated nuclei and young connective tissue, as in the liver, and the new growth appears to be very liable to fatty degeneration, so that the organ may be found completely transformed into a mass of oil-drops and granular detritus.

In one of the cases that I brought before the Society § the supra-renal capsules were greatly enlarged, being nearly the size of the kidneys (see p. 99). On cutting into them they each showed yellowish-brown discoloration, apparently the result of old hæmorrhages, lying in the midst of an opaque white substance. On microscopic section, taken at the junction of the opaque white medulla and the healthy cortex, the opaque white substance was seen to be fibrocellular tissue, very rich in polymorphous nuclei, containing hyaline masses.

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* "Nephritis in Infants," 'Reports of The Society for the Study of Disease in Children,' 1907, vol. vii, p. 287.

† "Infantile Nephritis," 'Archives of Pediatrics,' January, 1904, vol. xxi, p. 19.

‡ Lancereaux, "Des Affections Viscerales de la Syphilis Héreditaire," *loc. cit.*

§ "Interstitial Nephritis and Cirrhosis of the Supra-renal Capsules in an Infant, aged 5 weeks," 'Lancet,' November the 3rd, 1906.

These hyaline masses were of irregular oval shape, occupied about the fourth of the field of a high power, and stained fairly well; they contained a few nuclei of various shapes, and they sent processes into the surrounding fibrous tissue.

The Heart.

The heart, like other organs of the body, does not escape attack. Myocarditis has been found in syphilitic fœtuses[*] and it has been demonstrated in the heart of an infant, aged 6 weeks, by Hektoen.[†] In a case observed by Kantzow[‡] adjoining an interstitial myocarditis there was seen a muscular hypertrophy (myoma) which Virchow attributed to the neighbouring irritation, similar to that which produces bone formation in the vicinity of a gumma of the periosteum. In Coupland's case[§] the heart muscle was firm and resisting, and of a uniform pale pinkish-yellow tinge; the walls were thick, and they cut with a creaking noise. There was an extensive infiltration of small round cells, most abundant round the small arteries; the muscular fibres retained their normal striated appearance. Rosen[‖] records a congenital gumma of the left heart and we have seen here an example of gumma of the heart in an infant, aged 3 months, which was shown by Porter Parkinson.[¶] Forster[**] describes syphilitic endocarditis in a six months old infant.

I have elsewhere called attention to congenital syphilis as a cause of congenital heart disease, and increasing experience makes me feel more than ever that therein lies an explanation for some cases of fœtal endocarditis and carditis. I have seen a case of coarctation of the aorta in a boy, aged 5 years, which was probably of syphilitic origin, *vide* Case 1 in the appendix.

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[*] "Syphilitic Fibrous Myocarditis in an Infant born dead," Wagner, 'Das Syphilom Archiv der Heilkunde,' vol. vii, p. 527.

[†] 'Syphilis of Children,' p. 57.

[‡] 'Archiv der Path., Anat., und Physiol.,' vol. xxxv, p. 211, 1866.

[§] *Loc. cit.*

[‖] 'Behrend's Syphilidologie,' vol. iii, p. 249, 1860.

[¶] 'Reports of The Society for the Study of Disease in Children,' vol. i, pp. 141–142.

[**] 'Waerzburg. Med. Zeitschr.,' vol. iv, p. 7, 1863.

SYPHILIS OF THE MOUTH, THROAT, LARYNX, AND LUNGS IN INFANTS.

Syphilitic affections of the mouth, throat, larynx, and lungs are not common in infants, though various lesions of the fœtal organs have been recorded.

Such complaints usually occur as later manifestations, but even deep ulceration of the palate, pharynx, and naso-pharynx have arisen in early infancy.

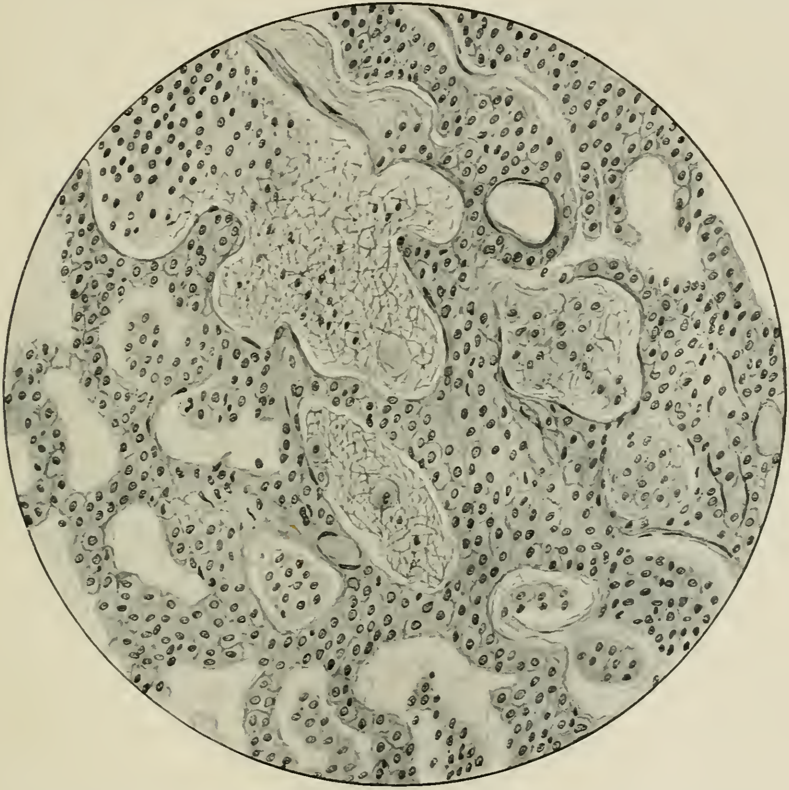

FIG. 11.—Syphilitic lung showing thickened alveolar walls from proliferated endothelium. Alveoli plugged with fibrin, and showing leucocytes and catarrhal cells. Leitz oc. 3, obj. 7.

In an infant under my care, aged 4 months, the ary-epiglottic folds were swollen, and an ulcer perforating the thyro-hyoid membrane led to a thin-walled cavity underneath the muscles. There was a dorsal ulcer at the posterior third of the tongue. The periosteum above the left knee was thickened.* During life the cry was aphonic and the breathing stridulous.

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* 'Syphilis of Children,' p. 43, par. 2.

In a child, aged 13 months, I found ulceration of the larynx and white hepatisation (first described by Devergie in 1831 *) of the lung, *vide* Appendix, Case 3.

In a syphilitic child, aged 1 month, there was a fleshy consolidation (splenisation) of the lung of a fibroid nature. The microscopical appearances were as follows:

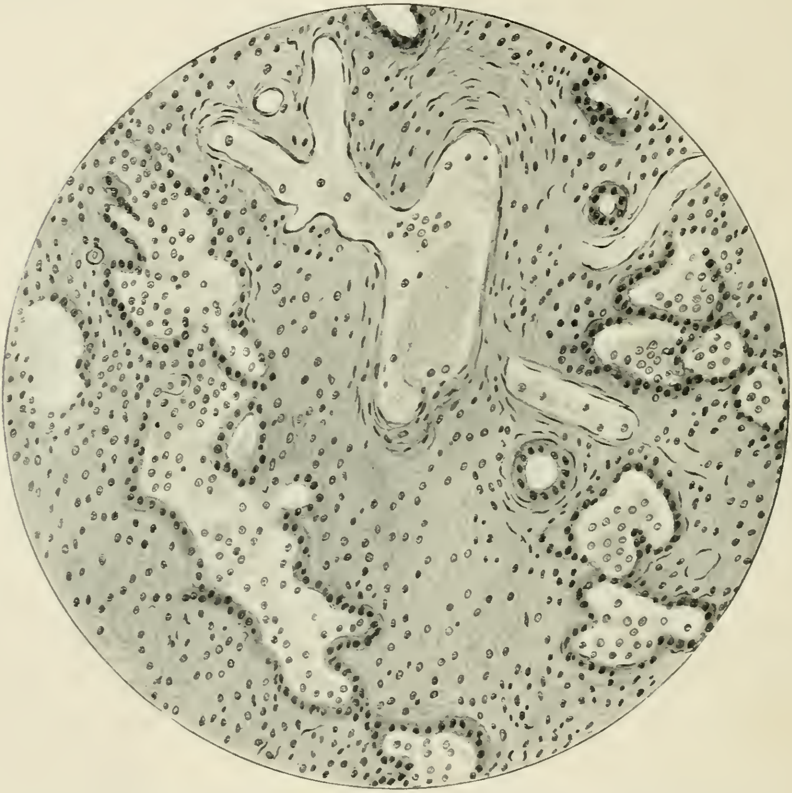

Fig. 12.—Syphilitic lung showing dilated vascular channels, fibroid induration, and lining of the alveolar remnants with a cubical epithelium. Leitz oc. 3, obj. 7.

The alveolar septa show the following changes: The alterations in them range from a condition of dilated capillaries in thickened alveolar walls which appear to consist solely of proliferated endothelium (*vide* Fig. 11) to a state where the thickening is definitely fibrillar with polymorphous nuclei and enlarged endothelial vascular channels (*vide* Figs. 11—13). Some of the capillaries in these walls show extravasation of leucocytes.

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* 'Annales d'Hygiéne et de Medécene legales,' April, 1831.

The alveoli are stuffed with cells so that it is often hard to separate the wall from its contents. These cells are mostly of the ordinary catarrhal variety with single well-staining nuclei of good protoplasmic envelope. But there are also cells twice or thrice that size of granular or pigmented aspect with poorly staining single, sometimes double, nuclei. Along with some of these cellular contents is granular detritus. The first mentioned have nuclei somewhat larger than a small lymphocyte, and in regard to protoplasm they greatly exceed the amount allotted to that body. In parts attenuated alveoli have put on an appearance as of a lining of cubical epithelium apart from the broncho-pneumonia (Fig. 12).

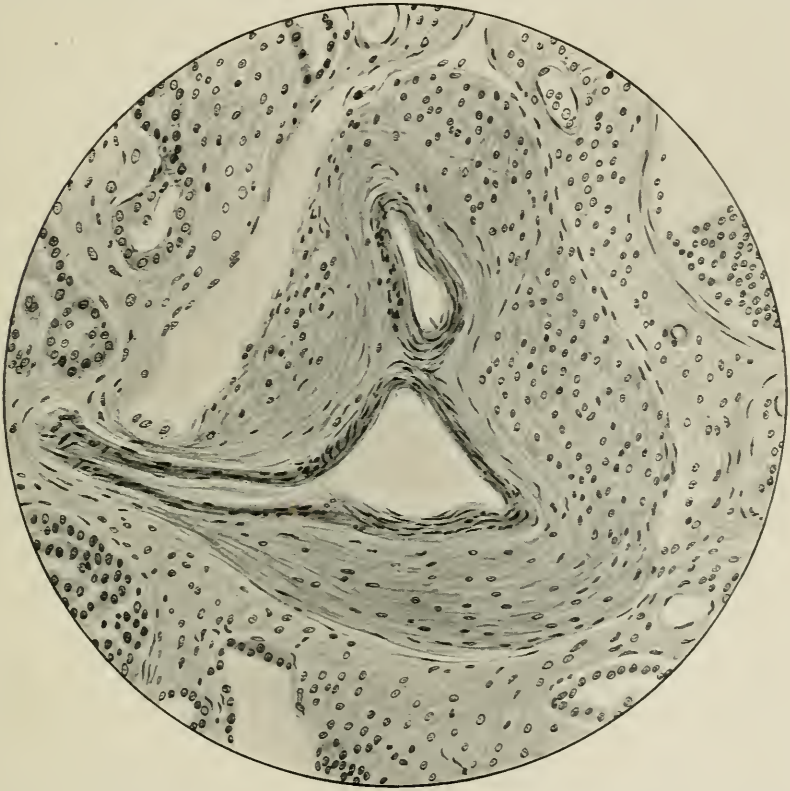

Fig. 13.—Syphilitic lung showing thickening of the external coat of an artery, fibroid thickening of the alveolar walls, with disappearance of the alveoli. Lymph space above and to left of artery. Leitz oc. 3, obj. 7.

Some of the alveoli are plugged with fibrin which is associated with catarrhal cells, and some cells are so poorly supplied with a protoplasmic envelope that they would do well for small lymphocytes (*vide* Fig. 12).

Blood channels (*vide* Fig. 12) possessing only an endothelial lining are thickened by surrounding fibrous deposit. Many greatly enlarged capillaries are seen ramifying in the thickened alveolar walls. Some of these blood channels (veins), seen to commence in definite capillaries, display fibrin clots with enmeshed small lymphocytes, and in some small lymphocytes are found blocking these latter. Such small clots can also be seen in the vasa vasorum within the arterial coats and in the blood-vessels within the bronchial walls. Large lymphocytes are only seen in them occasionally.

In one or two arteries in the sections there was pronounced thickening of the external coat (*vide* Fig. 13).

Attention has been drawn to plugging of the capillaries and small veins with lymphocytes and fibrin. This is a feature which I have also observed in the broncho-pneumonia of congenital syphilitics.

(*To be continued.*)

Philadelphia Pediatric Society.

Stated Meeting, Tuesday, February the 11th, 1908, J. P. Crozer Griffith, M.D., President.

SYMPOSIUM ON RHEUMATISM IN CHILDREN.

The Ætiology of Rheumatic Fever.—Dr. Warfield T. Longcope read this paper. He said that since 1887 various observers have called attention to the association of diplococci with the lesions of rheumatic fever, and during the last few years several writers, particularly in England, have described diplococci which they have recovered at autopsy from the heart's blood, endocardial vegetations, pleural and pericardial exudates, and synovial membranes of the joints in cases of rheumatic fever. Diplococci or streptococci have occasionally been isolated from the circulating blood during the course of a severe rheumatic fever complicated by endocarditis or pericarditis, but in uncomplicated cases of rheumatic fever almost all observers have failed to obtain bacteria either from the blood-stream or the free fluid in the joints. These diplococci or streptococci cannot, by any means now at hand, be differentiated morphologically or culturally from *Streptococcus pyogenes*, but certain investigators have claimed that cultures inoculated into rabbits intra-venously will produce specific lesions. The lesions which most frequently follow inoculation are multiple arthritis, endocarditis, pericarditis, and pleurisy. Recently the question has been raised, especially by Cole, as to whether these results of inoculation are specific for the streptococci isolated from cases of rheumatic fever. Cole showed, through a series of experiments, that streptococci from various sources may, with fair regularity, produce multiple arthritis, and occasionally endocarditis in rabbits. Although these results have been disputed by Beattie, it must still be conceded that different strains of streptococci may produce the same lesions in rabbits as streptococci isolated from cases of rheumatic fever, though the latter organisms seem to give rise to polyarthritis and endocarditis with greater regularity than any other strains so far tested. At the present time there seems to be no convincing proof that these diplococci are specific bacteria or the cause of a specific disease—rheumatic fever.

The Relationship of Rheumatism to Chorea.—Dr. D. J. McCarthy stated that a study of this relationship resolves itself into an investigation of the statistics of clinical and pathological reports covering the last sixty years. As the majority of these reports are controversial in nature they lack scientific value. There is, however, a certain unanimity of opinion among those who have investigated the subject in a careful and scientific manner. In the statistics of Osler, Thayer, Wollenberg, etc., you will find a history of antecedent and coincident rheumatism in from 21 to 25 per cent. of cases. Other statistics vary from 4 to 80 per cent. According to the statistics of the three authors above quoted, 75 per cent. of cases are left unaccounted for. The investigations of Dunn, Weil and Thevenot, and Hawthorne show that rheumatism in childhood need not necessarily be associated with joint symptoms, and may occur without pain. If rheumatic fever may have for its only clinical manifestation an infection of a serous membrane, it is quite possible that a choreic syndrome may likewise be its only manifestation. In the absence of a distinct micro-organism as the specific causative agent in all cases of rheumatic fever, the only position that we can be justified in taking in this matter is, assuming Sydenham's chorea to be the result of an acute infection, that acute rheumatic fever is by far the most frequent cause, and that until the organism of rheumatic fever had been isolated and accepted, other infections must be considered as possible causes. The investigation of Poynton and Holmes, who found the *Diplococcus rheumaticus* in six fatal cases, must be accepted as strong evidence that, in the group of fatal cases of chorea, this organism is frequently the cause of the condition. In other cases, however, other organisms may be mentioned. Pianese reports a diplococcus and diplobacillus. Maragliani, Richter, Berkeley, Dana, Meyer, Proebrajensky and Gazetti have reported staphylococci, streptococci, and diplococci.

Dr. McCarthy concluded that: (1) Sydenham's chorea may be considered the result of an acute infectious toxic process of the cerebral nervous system; that (2) until acute articular rheumatism is distinctly limited as an acute specific infection with a distinct and definite bacterial cause, it is not only not scientific, but it is useless to consider every case of chorea and every apparent case of endocarditis, pericarditis, or myocarditis as rheumatic; that (3) on account of the frequency of disease of the serous membranes, and more particularly of the endocardium or myocardium, even mild cases of chorea should be considered as a serious disease of childhood, and that the patient should be confined to bed until the symptoms have subsided, for a period of four to six weeks at least, and in every case the heart should be frequently examined, and, during the disease and during convalescence, protected from over-action due to excitement, over-exercise, etc.; and (4) that during the winter and spring months, nervous, high-strung children should be carefully guarded as to general hygiene and nutrition, and relieved as far as possible from the worry and overwork associated with school tests and examinations.

The Peculiarities of the Symptomatology of Rheumatism in Children.—Dr. Charles H. Dunn, of Boston, read this paper. He said that the peculiarities of the symptomatology of rheumatism in children are important, not only from their own intrinsic interest, but also from the light which they throw upon the unsettled question of ætiology. There is no disease in which the clinical pictures are more widely different in childhood and adult life. The onset of the disease is with cardiac symptoms almost as often as with arthritic symptoms. The onset may be with sore throat, or without any localising symptoms. The fever is higher and more prolonged in the cases with cardiac symptoms than in those with arthritic symptoms. In general the fever curve is characterised by an absence of any wide daily variation in the temperature and by the absence of abrupt exacerbations and remissions. Constitutional symptoms are slight or absent. The joint symptoms in children are frequently entirely absent. They are characterised by comparative mildness, short duration, and fewer joints affected. Nearly all cases in children have evidence of an organic lesion of the heart. In children acute endocarditis is not of insidious development, but is accompanied by actual symptoms of cardiac weakness, which may be the only symptoms of the disease. Another very marked peculiarity of rheumatism in children is the tendency to frequent recurrence, with varying manifestations.

For convenience rheumatism in children may be divided into the following clinical types: (1) The mild arthritic type; (2) the severe arthritic or adult type; (3) the latent type; (4) mild primary endocarditis; (5) severe primary endocarditis; (6) mild pericarditis; and (7) severe pericarditis.

The Complications of Rheumatism in Childhood. Dr. Alfred Stengel read this paper. *General infection associated with rheumatic arthritis.*—The infectious nature of rheumatism is everywhere recognised, though the unity of bacterial causation may be doubted. A comparison of the disease as we see it in adults with that observed in childhood brings out the probable infectiousness in a somewhat clearer light than does the study of the disease in adults alone. It has been shown by numerous authorities, and is generally recognised as true, and has been so recognised here to-night, that the articular manifestations are comparatively slight and unobtrusive in childhood, but it has not been generally emphasised that the symptoms of general infection are frequently strikingly severe in children despite the mildness of the arthritic symptoms. When we compare the severe joint disease and relatively mild symptoms of general infection of adults with the cases referred to as occurring in childhood, one is impressed with the fundamentally important fact that rheumatism is truly an infection with but a moderately preferential localisation in the articulations. If we consider next that in various forms of septico-pyæmia, and in more definite infections, like typhoid fever, dysentery, scarlatina, smallpox, and pneumonia, arthritis is not uncommon, and if we accept as even remotely probable the view of those who maintain that rheumatism is a form of attentuated septic infection, we may recognise in many of the cases of rheumatism of childhood a transitional type of disease lying midway between the rheumatism of adults with its severe articular phenomena and milder general infection and the above-named group of diseases with severe general infection and occasional and often fugacious joint symptoms. In pointing out this comparison, I am not forgetful of the fact that the rheumatism of adults at times presents itself, as I have described, as more common in children, and that, on the other hand, children may suffer rheumatic attacks like those more commonly seen in adults. The complication of rheumatic arthritis with symptoms of severe general infection is then in no sense confined to childhood, but is perhaps more frequent and certainly more striking in early life.

Anæmia.—The clinical picture of intense secondary anæmia as a complication of severe septic infection is familiar to all of us. Somewhat the same type and grade of anæmia may occur in rheumatism, especially in the cases otherwise complicated, as with severe cardiac lesions, pleurisy, kidney disease, etc. Cases of this character may occur in adults, but are, in my experience, much more frequent in childhood. The anæmia is characterised by marked reduction in the percentage of hæmoglobin, and in somewhat less decided diminution in the number of red corpuscles. There is usually slight or moderate leucocytosis. A clinical picture of interest is the occasional rather sudden development of the anæmia after a rather long course of the disease without striking implication of the blood.

Cardiac complications.—Myocarditis is doubtless the most frequent complication, endocarditis and pericarditis being distinctly less common. Of the latter two, endocarditis appears to be the more frequent, and perhaps is actually so, although it should be remembered that the after-results of endocarditis are more obvious, and that consequently the frequency of this complication possibly seems proportionally greater than it is. So far as myocarditis is concerned, it may be accepted as probable that practically all cases of rheumatism in childhood, except the most trivial, are accompanied by some myocardial disease. In many of the milder cases complete resolution occurs; in others recovery may seem to be complete, though enough residual sclerosis remains behind to form the basis of renewed myocardial disease in later life; in the severest cases the myocardial disease remains as a persistent and obvious condition. The last group are practically always associated with endocardial and pericardial lesions. So far as endocarditis and pericarditis are concerned, it is noteworthy that these are far more commonly associated than in the rheumatism of adults, and are also more commonly attended with marked grades of myocarditis to make up a veritable pancarditis than is the case in later life. Dr. Dunn has very properly stated that the symptoms of cardiac disease are more abrupt and violent in childhood and attention is more insistently called to the heart than in adults; but this is not always the case. There are many instances in which pericarditis particularly exists with but little to indicate that it has developed or that it has associated itself with endocarditis or myocarditis. So often is this the case that I have found it almost generally advisable to assume the existence of pericarditis when marked cardiac lesions are suggested, even though physical signs of pericarditis are not discoverable.

Complications in other serous membranes.—Symptoms of "cerebral rheumatism" are distinctly less common in childhood than in adults. Whether actual meningitis is more or less common is less certain. The cerebral symptoms are doubtless usually non-organic, or at most the result of mere circulatory troubles (congestion). It is easily conceivable, therefore, that the more functionally active organ of adults would oftener suffer in this way, and experience confirms this theory.

Pleurisy, in my experience, is a less common complication of the rheumatism of children than of adults.

Complications in the mucous membranes and lymphatic apparatus.—Sore throat, and especially marked tonsillar and other lymphadenoid lesions of the pharynx, are distinctly frequent in the rheumatism of children. Enlargements of the regional lymphatic glands are also more common. In this connection a reference to the position of the rheumatic disease of children described by Still may be in place. I have not been able to convince myself that this represents a type of disease fundamentally different from ordinary rheumatism. Moreover it is not confined to early life, though much more common then. The enlarged glands, the enlarged spleen, the general emaciation and the persistent joint lesions are indeed significant of an infection severe beyond the usual. but the condition represents only a variation from the type of ordinary rheumatism of childhood, and so far as the lymphatic apparatus is concerned it presents less variation than in its more than ordinarily intense involvement of joints. The terminal results are sometimes similar in a perplexing degree to those of rheumatoid arthritis, but the clinical course of these cases differs widely from that of the latter.

Gastro-intestinal symptoms are usually entirely secondary and adventitious complications of rheumatism. Gastro-enteritis is, however, more frequent in childhood than later.

Chorea and dermal complications.—I leave these alone, as belonging to the other speakers of the evening.

Renal complications.—In proportion as general infection is more marked in childhood than in adults, so also are renal complications, which are presumably the expression merely of this general infection. Few cases of intense cardiac complication of rheumatism escape a more or less decided grade of infectious nephritis. Albuminuria alone cannot be taken as significant of such a complication, and least of all when it is discovered only once or on a few occasions. Constant abuminuria and the association of tube casts must be assumed to indicate at least temporary, if not permanent nephritis. The prognosis of severe cases of rheumatism is not rarely determined by the occurrence of this renal condition.

Finally, let me say one word regarding diagnosis. In view of what I have mentioned in the beginning of my discussion, it is important that the clinician should carefully distinguish by the history, the clinical course and the nature of the lesions between infections of various sorts attended with mild or severe arthritis, and rheumatism with secondary or associated infectious lesions.

The Cutaneous Manifestations Observed in Rheumatism in Children.—Dr. Jay F. Schamberg stated that the most conspicuous symptom of articular rheumatism, polyarthritis, or polysynovitis, could result from infection with a variety of micrococci. It could also be produced by non-bacterial agencies. This is seen particularly in the symptoms at times observed after the use of a heterogeneous or alien blood serum. Fever, joint pains, articular swelling, and an eruption, are the phenomena often noted after the use of diphtheria antitoxine or other sera. These symptoms are due to certain undetermined albuminous constituents of the blood serum, and not to the antitoxic principle. There is no cutaneous eruption constantly seen in rheumatic fever, nor does any exanthem appear which may not be encountered in other infectious processes.

The eruptions most frequently noted are exudative erythema multiforme, usually of the gyrate or papular form, erythema nodosum, scarlatiniform erythema, urticaria, and forms of purpura. These eruptive manifestations all belong to the so-called "erythema group of skin diseases." This group of eruptions may be called into existence by a variety of causes—bacterial toxines, metabolic poisons and drugs. In the last the cause is a chemical poison in the circulating fluids of the body. These various eruptions may develop after the use of sera, in the course of divers infectious diseases, from the ingestion of medicaments, etc. They may also occur as independent dermatoses in ambulant patients.

Dr. Schamberg referred to simple herpes, sudaminous vesicles, miliaria, the various erythemas, urticaria, and purpura hæmorrhagica as the eruptions encountered at times in rheumatic fever. He expressed the opinion that erythema nodosum and peliosis rheumatica are not pure and essential rheumatic processes, but that they are toxic affections produced by a variety of infections, of which the rheumatic is the most frequent.

The Treatment of Rheumatism in Children.—Dr. J. P. Crozer Griffith dwelt upon the impossibility of understanding the therapeutics of the disease satisfactorily as long as its ætiology was not positively understood and its relationship to other rheumatoid affections not clearly known. In discussing the treatment of acute rheumatism, Dr. Griffith avoided the word "articular," as articular symptoms in childhood were frequently absent, the disease often manifesting itself in many other ways, as tonsillitis, chorea, endocarditis, etc. Owing to the great tendency to recurrence of the disease, prophylaxis was the chief desideratum. This was especially true in rheumatically disposed children. Overheating, exposure, and over-fatigue should be guarded against. Underclothes should be warm, but not warm enough to produce perspiration on the slightest exercise. A child who grows warm from violent exercise out of doors should not be allowed afterwards to stand about unprotected. Change of climate was of great value for those disposed to rheumatism, especially in the spring and winter. Warm, dry, equable climates were to be preferred. High altitudes, although dry, were objectionable. Tonsillitis should be treated promptly, as the germs or rheumatism often enter in this way.

In the treatment of the attack, external treatment was first considered. Absolute rest was imperative, especially in view of the difficulty of recognising the beginning of cardiac involvement. Inflamed joints should be wrapped in cotton and often immobilised. Warm water should replace cold for ablution. Of applications recommended, ichthyol and oil of gaultheria have many supporters and are often serviceable. Gentle compression of the joints is sometimes useful. The Bier method is worthy of trial. Blistering over the heart, if this organ becomes involved, is of questionable benefit and not applicable to young children.

For internal treatment, of the many drugs recommended, those still especially in vogue are salicylic acid and the alkalies. Although there is no proof that the salicylates certainly cure the disease, yet they undoubtedly relieve the pain, and we have as yet nothing to be preferred to them. Salipyrin, salophene, and aspirin are often useful, but generally cannot replace the ordinary salicylates. Salicylic acid preparations do not seem to have any influence in preventing cardiac involvement. Alkalies in large amount should be administered when the urine is decidedly acid. Evidence has been advanced to the effect that they prevent the development of cardiac complications. A specific serum treatment has been tried by several observers, but the results are not convincing.

Chronic rheumatism is particularly resistent to treatment, and is usually not benefited by the salicylates or alkalies. Hydrotherapeutic measures, particularly sojourns at hot springs, are useful in this form. Cod-liver oil, arsenic, and iodide of iron internally are often of benefit. Dry heat is frequently serviceable.

The relationship of muscular rheumatism to other forms of rheumatism is uncertain. It is frequently seen in individuals who are disposed to rheumatic arthritis. The treatment indicated for the latter condition is of service in the former, and, in addition, such measures as counter-irritation, heat, electricity, and massage may be valuable.

Dr. Edwin E. Graham, in opening the discussion, said that the subject had been gone over so thoroughly that he was almost at a loss where to begin. He thought the point most to be emphasised was that, while rheumatic fever is a very common disease in childhood, it is not so common under the age of three years; and that associated with rheumatic fever we do not necessarily have an arthritis. Therefore, in beginning a consideration of rheumatic fever in children, one must approach the subject in a very different way from what one would in an adult. With this point in mind, more stress should be placed upon heredity in the diagnosis as to whether a case is, or is not, rheumatic in a child. Many family histories of children will show a distinct tendency to rheumatism in one or both parents or in one or more of the grandparents. In arriving at a diagnosis one should take into consideration the fact that the symptomatology of rheumatism in the child is distributed over a very long period, and there is not likely to be a sharp, clear-cut attack as in the adult. The child has the rheumatic diathesis, however, and the symptoms persist more or less during child-life. Therefore symptoms such as sore throat, tonsillitis, erythema, vague joint-pains, growing pains, and muscular pains and soreness should be considered; because while they, perhaps, would not point to distinct rheumatic fever in adults, they certainly do so in children. Where there is a moderate amount of pain associated with a moderate amount of fever, and, perhaps, sore throat, one is justified in making a diagnosis of rheumatic fever in the child. The picture of rheumatism in America does not correspond with the English picture of that disease. In regard to the observations of Still concerning subcutaneous nodules, referred to by Dr. Stengel, Dr. Graham thought that if those were carefully looked for they might be discovered more frequently than they are. He had been looking for them for a number of years and had occasionally found them. They are not tender, and are not visible unless the skin is drawn tensely. Dr. Graham thought it unfair to assume that every case of fever with joint-pains was rheumatic; but if we exclude syphilitic and tubercular bone disease, osteomyelitis, scurvy, etc., the large majority of cases can be proved to be rheumatic, in exactly the same way described by Dr. Dunn, by following the child's history through the period of childhood. The attacks usually recur, and if no heart lesion is discovered in the first attack, it will probably appear in the second or some subsequent recurrence. In regard to the prognosis the danger from heart lesions is, in the majority of cases, one of the future; yet Dr. Graham has seen a case of rheumatism in a child, aged 4½ years, that ended fatally in one month. This child had never been sick enough to be in bed until thirty days before death. The arthritic symptoms of rheumatism in children may be very mild or entirely absent, therefore the rheumatic poison not uncommonly expending itself on the heart, associated with which the kidney is likely to be affected. The child just referred to had albuminuria and casts, but the arthritis was not sufficient to cause it to be put to bed earlier than the time mentioned, when it was seen by Dr. Graham. The mother told him that the most it had complained of was a moderate amount of pain when stooping down in play. Cases of this kind are not, however, very common. The initial symptoms of rheumatism will be found to point more commonly to the throat than has hitherto been suspected, if one takes the trouble to inquire as to the presence or absence of throat symptoms. Usually they are not severe enough to make the child complain of pain or difficulty in swallowing; but a careful examination of cases in which one suspects rheumatic fever will, in a fair proportion of cases, show that the child had distinct throat symptoms, redness, and, perhaps, tonsillitis.

Dr. David L. Edsall said that he was glad to hear Dr. McCarthy state so firmly and definitely that chorea belongs among the infectious conditions. A year ago he had heard a distinguished neurologist poke fun at clinicians because they would insist upon calling it an infectious disease. He thought it especially important that this disease should be recognised as being subject to the same complications that an infectious disease is subject to. It is desirable from the beginning that the chorea patient should be put in circumstances to make it as unlikely as possible to bring on complications, more particularly endocarditis, or to make it worse should it appear. In regard to Dr. Dunn's very admirable and lucid paper just read, and from one published by him a year ago, Dr. Edsall said that they brought out in a way that had scarcely been done so forcibly before two important points, viz. the great frequency of the cardiac lesions without noteworthy arthritis in rheumatism in childhood, and the way in which rheumatism often comes on with cardiac symptoms, as contrasted with the usual later development of actual symptoms in adults, and, on the other hand, the very great frequency with which obscure symptoms occur in childhood, pointing only slightly to the articulations. These points, particularly in dealing with students, must be insisted upon very firmly, as students do not grasp them until they are forcibly demonstrated. Dr. Edsall partly differed with Dr. Dunn in his general conception of the condition. He thought that, while it is all very well as a working basis to group these endocardial conditions of obscure causation and the joint conditions of obscure causation under the name of "rheumatism," one ought to bear in mind constantly the fact that has been coming out more clearly in relation to joint conditions in adults, that some local cause for these conditions must be looked for constantly. As time goes on, although a large proportion of cases remain obscure and appear to constitute a distinct disease, a certain considerable number are falling into the class of those that are considered sepses due to some focal source of infection in the throat, the gastro-intestinal tract, the genito-urinary tract, and various other situations. If all obscure conditions are simply grouped as rheumatism, progress will be obstructed unless it be realised that one must not stop with the provisional diagnosis of rheumatism, but must keep in mind that focal sources of infection must be sought for, and, if present, got rid of. Many persons will say that these are even less commonly found in children than in adults. In recent years, however, the tendency has been to include almost everything that is obscure among acute conditions of this kind under rheumatism in childhood, while the tendency in dealing with adults has been to realise that many things that used to be classed as rheumatism are not rheumatism. Classing all indefinite joint and cardiac conditions as rheumatism obscures the fact that focal sources of infection may be found. If such are found we can sometimes overcome the trouble directly, and hence they must be looked for whether one calls the case rheumatism or not. It is desirable to study particularly the obscure cases, especially the prolonged and recurrent cases in childhood, studying them more regularly bacteriologically and taking blood cultures whenever possible. In some instances, in youthful subjects whose cases Dr. Edsall would otherwise have classed as rheumatic, he has found cultures of organisms that, with our present conceptions, put these cases into a group other than simple rheumatism. In some instances cases have been described in which focal sources of infection were found, and the condition was controlled by getting rid of the focus of infection. Dr. Edsall said that he did not mean to detract from the value and importance of Dr. Dunn's observations and studies, for the emphasis he had placed upon the frequency and peculiarities of cardiac conditions in rheumatism in children and upon the different symptomatology of the disease in childhood as compared with adult life is most important.

Dr. George B. Wood said that the few words he had to say concerned only the ætiology of rheumatism, and especially its relation to the upper respiratory tract. As he understood the present status of opinion as to the cause of acute rheumatism, the question of specificity is still undetermined. Dr. F. A Packard, in his memorable work on the relation between tonsillitis and rheumatism, said that he believed that acute articular rheumatism is due to the attenuation of organisms by their passage through the tonsillar structure. A third possibility as to the cause of rheumatism is that the condition is not a bacteriæmia, but rather a true septicæmia, due to the absorption of toxines from the local focus. If it were to be proved that there is a specific germ, theoretically it does not seem likely that the tonsillar structures would be any more responsible for the entrance of these specific micro-organisms than other portions of the gastro-intestinal tract. The tonsils are lymphatic structures, and, as we know, lymph-glands act as filters to prevent the entrance of organisms into the general system. If, however, we believe with Dr. Packard that rheumatism results from the attenuation of various pyogenic germs, then the tonsils must be considered as very important structures in the ætiology of this disease. The retention of organisms in the tonsillar crypts, where they come in contact with the vital action of the tonsillar tissue, undoubtedly favours the modification of their virulence. Further, if they are sufficiently pathogenic to penetrate the tonsillar structure proper, they can enter the blood only after they have passed through the tonsil and the cervical chain of lymph-nodes. If the symptoms of rheumatism depended simply upon the presence of toxines absorbed from some local infected focus, again the tonsillar structures must undoubtedly be considered as holding important ætiological relations to this disease. Dr. Wood said that in using the term "tonsil" he meant to include not only the faucial and, perhaps, pharyngeal tonsils, but also the lateral folds of the pharynx, the lingual tonsil, and the solitary nodules on the post-pharyngeal wall, in fact all the lymphatic structure of the mucous membrane where the adenoid tissue comes in direct relation with the surface epithelium or its invaginations. This should probably include the solitary follicles of the gastro-intestinal tract and the lymphatic tissue of the appendix, but as the faucial tonsils possess certain anatomical structures which favour the retention of micro-organisms, they are much more important as ætiological factors than any other tonsillar tissue. Dr. Wood said that the association of tonsillitis with rheumatism has been recognised by almost all observers, but the exact relation of the two is subject to a large variance of opinion.

McCrae gives 3·7 per cent. of cases of rheumatism showing tonsillitis, while Hammerschmidt gives 50 per cent., and says that all his cases showed some pharyngeal irritation. Other observers range between these two. Gurich has reported that certain cases of rheumatism show reaction when the tonsil is operated upon, while others do not, and he believes there is a tonsillar type of rheumatism in which the removal of the tonsillar tissue cures the disease. In children it is most essential, as Dr. Dunn has pointed out, that the tonsils and pharynx should be carefully inspected, as conditions are frequently overlooked in children when the physician in charge depends for his diagnosis upon the complaint of the patient. Again, the physician must remember that even direct examination may fail to reveal any tonsillar changes, although they exist. Dr. Wood has frequently opened large retention crypts in tonsils, during operation, which were absolutely unsuspected; has found unsuspected tubercular deposits by microscopic examination; also small abscesses within the tonsil parenchyma, where the visible portions of the tonsil were perfectly normal. It is undoubted that certain cases of rheumatism are cured by removal of the tonsils, while other cases remain absolutely unaffected. It is Dr. Wood's belief that positive evidence as to the importance of the faucial and pharyngeal tonsils in the ætiology of rheumatism is to be obtained only by a study of those rheumatic patients from whom the tonsillar structures have been removed.

Dr. Alfred Hand, jun., said that one or two points had struck him as especially interesting. When Dr. McCarthy spoke of the similarity between rheumatism and chorea, it suggested a point of dissimilarity which is shown by the condition of the heart. In rheumatism the heart is always accelerated, and if the pericardium or endocardium is inflamed the pulse is very rapid. In all of the cases of chorea which Dr. Hand had seen in the last few years the pulse is usually slow—60 or 50. From the weakness of the pulse and the general prostration, it seems that inhibition through the nervous mechanism could not solely account for it: there must be some change in the myocardium, perhaps a slight degeneration. The latter is, however, really a point of resemblance between rheumatism and chorea, because the myocardium has always degenerated in rheumatism, and the prognosis depends not so much upon the valves infected or the severity of the valvular lesions, as upon the degree of myocardial involvement. Another point of interest lies in the beneficial effect of the treatment with alkalies. English writers advocate large doses of salicylates. Dr. Hand has tried them, but with no better success than with the alkalies. He has abandoned the use of Fowler's solution in chorea, except when other remedies have failed. He first tries the alkalies, and the cases usually respond very well. Dr. Hand remarked that Dr. Dunn had very well brought out a thought that had occurred to him when at Toronto attending the meeting of the British Medical Association, listening to a symposium on rheumatism, viz. that geographical distribution plays some part in the occurrence of rheumatic nodules. He has been looking for these ever since his student days, and has found but one case of subcutaneous rheumatic nodes. The English apparently lay great stress upon them, so there must be some geographical influence at work to cause their production. The same disease will undoubtedly vary in different locations. In regard to the fact that anæmia is usually more marked in children than in adults, as mentioned by Dr. Stengal, Dr. Hand said that he agreed that this is so. Anæmia is a guide in the prognosis. If profound, he feels much discouraged. He has seen a number of cases of rheumatic endocarditis that apparently yielded to the alkalies; yet a profound anæmia which would not respond to tonics, fresh air, hygiene, etc., came on and progressed. There should then be a relapse of the endocarditis, either with fever or with sudden heart failure, sometimes with symptoms suggesting pulmonary infarct. In regard to the use of salicylates in acute rheumatism, referred to by the President, Dr. Hand said that his custom is to employ them as a check on the diagnosis. If he makes a diagnosis of rheumatism and the salicylates do not give a prompt response in a few days, either in relieving pain or in controlling fever, he considers that the diagnosis should be carefully revised. The salicylates, if persisted in, will not then be of benefit, even though the case be clearly rheumatism.

Dr. Theodore le Boutillier said that, while working in Edinburgh in 1900, the question of rheumatic nodules came up, and he saw in two months six or eight cases that showed the nodes very well. He had since been looking for them, and had found in this city seven or eight cases of clear rheumatic nodules. These have been found almost exclusively in children with recurrent attacks of rheumatism, and in those showing grave heart lesions. In this part of the country, therefore, rheumatic nodules are occasionally seen.

The Society for the Study of Disease in Children.

A meeting of this Society was held on Friday, February the 21st, 1908, at No. 11, Chandos Street, W., Dr. Edmund Cautley in the chair.

A Paper on a Case of Acute Intestinal Obstruction Produced by a Band was read by Mr. H. S. Clogg. A boy aged 12 years, immediately following a blow on the abdomen, developed signs of acute intestinal obstruction, and when seen about forty-four hours after the onset of symptoms he was very ill. The presence of a rounded and resonant swelling in the right iliac and hypogastric regions suggested a volvulus as the cause. Operation was performed about forty-six hours after the commencement of the illness. About one foot of small intestine was snared under a band of this loop and the gut was also twisted on its mesenteric axis. The intestine appeared gangrenous and was excised. The ends were anastomosed by Murphy's button. The band and diverticulum were removed. The boy's condition was precarious for several days, but he ultimately made an excellent recovery. The interest of the case lay in the nature of the band. It was composed of an intestinal diverticulum some three quarters of an inch in length with more or less perfectly formed intestinal walls. Attached to the distal extremity was a flattened glandular body, three quarters of an inch in diameter, which showed the structure of the pancreas on microscopical examination. Leading from the extremity of the diverticulum at its junction with the accessory pancreas was a definite rounded cord consisting of fatty and fibrous elements The diverticulum was regarded as a true congenital one.

Mr. Hugh Lett agreed that the specimen was a diverticulum and thought that the strongest argument in favour of this was the thick round cord which was connected with the diverticulum.

Barnard found that Meckel's diverticulum was responsible for acute intestinal obstruction 21 times in 669 cases, and the specimen shown by Mr. Clogg was an example of the variety which most frequently caused obstruction, viz. a diverticulum leading from the bowel continued at its apex into a thick rounded cord whose distal end, though originally free, had acquired a new attachment and so formed an archway under which a loop of intestine passed and became strangulated.

The prognosis in cases of acute intestinal obstruction due to Meckel's diverticulum was very grave, for of the 21 cases mentioned above no fewer than 16 died; that was a mortality of 76·2 per cent. compared with a mortality of 53 per cent. for all cases of acute intestinal obstruction. One reason which had been given for this high mortality was the frequency with which the diverticulum itself became gangrenous in consequence of its being rotated on its own axis, and so strangulated, by the coil of intestine which it obstructed.

Two Specimens of Congenital Morbus Cordis were shown by Dr. George Carpenter. The first was from a female, aged 10 weeks. When admitted into hospital she was anæmic, ill-nourished, and ill-developed. Her tongue was large and protruded from her mouth, and she did not close the lips over it. The cartilages of the last four ribs were absent. She was not cyanosed. The area of cardiac dulness was increased to the right and there was a loud systolic bruit best heard over the pulmonary orifice; it was audible over the back and front of the chest, louder on the left side than on the right. Ten days after admission she was convulsed, and some hours afterwards died collapsed. The aorta arose from both ventricles, four fifths of its lumen being over the left. The pulmonary artery was small and but half the size of the aorta; it had two semilunar valves. The ductus arteriosus was patent and of the size of a small probe. The foramen ovale admitted an ordinary lead pencil. The auricles were of equal size and thickness. The heart was inclined to be bun-shaped, and the left ventricle was twice the thickness of the right. The tongue was examined microscopically, but nothing abnormal was detected.

The second specimen was from a female, aged 9 months. When admitted into hospital she was very pale and thin and suffering from pneumonia. She died on the following day. There was a loud systolic murmur best heard over the third left interspace, audible back and front, better on the left side than on the right, and also to be heard in the great vessels of the neck. The pulmonary artery was larger than the aorta. It divided right and left into branches for the lungs, and ended in a third vessel which practically continued the thoracic aorta. The aorta having given off the usual vessels was contracted at its junction with the ductus arteriosus, being at this point a trifle larger than the innominate artery. Beyond the union the artery was smaller than the branches to the lungs, being $\frac{3}{16}$ in. in diameter. The right and left auricles practically formed one chamber, though its right side was twice as thick as, and larger than, the left. The auricular septum was represented by a translucent membranous partition of semilunar outline hanging from the roof of the auricle and attached back and front. It measured a trifle more than $\frac{1}{4}$ in. in depth and about $\frac{5}{8}$ in. from before backwards. Posteriorly it was somewhat fenestrated. The heart was inclined to be rounded on the right side. The left ventricle, though apparently more muscular than the right, did not bear the usual relationship in regard to thickness. The cavity of the left ventricle was smaller than that of the right. Dr. Carpenter said that although the malformations were so dissimilar, the physical signs were practically identical. Further the bruits that were heard were the same as those audible in stenosis and atresia of the pulmonary artery and perforate septum ventriculorum. They well illustrated how deceptive the auscultatory phenomena are as a means of determining the nature of cardiac malformations.

The Chairman said that it would be well if a collective investigation were made as to the true significance of heart murmurs, and all possible cases shown, especially those which were likely to die of heart disease, so that the specimens could be demonstrated later.

Dr. F. J. Poynton said that cases of patent ductus arteriosus were described as having a long bruit heard to the left of the sternum which occupied the whole systole and diastole as a sort of continuous humming murmur. But it had also been recorded by the late Sir William Broadbent and others that the same continuous murmur was associated with a patent septum ventriculorum. He asked whether Dr. Carpenter thought that the murmur in a patent ductus arteriosus was exactly like the murmur in his first case, or whether it struck him that it occupied the whole systole and diastole. He would also like to hear if any member had had an autopsy on a case where there was a continuous humming murmur over the pulmonary region. Cases of the kind which he had seen had done remarkably well. He had three which were still alive without any cyanosis, though with some shortness of breath.

Dr. William Ewart said that Dr. Poynton did not refer to the possibility that some cases might be intra-thoracic venous murmurs.

Dr. Charles W. Chapman said that such cases met with in children did not seem to die, yet the murmur did not seem to be met with at a later age. He did not know what became of them. Some of the patients in whom there was a continuous murmur went about quite well, and there were no symptoms.

Dr. George Carpenter, in reply, said that the murmur in the second case was exactly similar to that which was audible in stenosis of the pulmonary artery. He thought an identical murmur was produced in stenosis of the pulmonary artery with a patent septum ventriculorum and without a patent septum ventriculorum. It also was heard in patent septum ventriculorum only. In his second case there were two possibilities of origin, viz. at the foramen ovale and in the patent ductus arteriosus. Where the ductus arteriosus and the aorta joined there was stenosis, and a murmur might have been produced at that point. He did not think the murmur was caused at the foramen ovale as it was systolic in point of time. He was aware that a continuous humming murmur is described as occurring in patent ductus arteriosus, but he had not met with such a case. He had made many clinical observations and subsequent post-mortem examinations in patent septum ventriculorum, and in no case had the murmur been continuous.

Specimens from a Case of Frontal Meningocele and Spinal Myelo-meningocele were shown by the Chairman. (*a*) The skull-cap showing: (1) A circular orifice in the left frontal bone through which a meningocele projected during life; (2) the remains of a cephalhæmatoma in the left posterior parietal region with some subdural hæmorrhage under both parietals; (3) isolated patches of cranio-tabes. (*b*) A myelo-cystocele from the lumbo-sacral region showing that the arches of five vertebræ were defective, and that the spinal cord could be traced from the canal to the lower end of the tumour. The specimens were from a male child, aged 18 days. Labour was instrumental. He was the seventh child, and the mother had had no miscarriages.

A Case of Cerebral Ataxia and Imbecility was also shown by the Chairman. She was a girl, aged 2 years, and only weighed 14 lb. 14 oz. She had been deserted by her mother. She was unable to stand, walk, or talk; she could sit up, use her hands, and feed herself with bread or biscuit, but would not use a spoon. There was coarse tremor of the hands, and the knee-jerks were exaggerated. The head was 17¼ in. in circumference, she had twelve teeth, and the fontanelle was still unclosed. The mother had had two miscarriages, two still-born children, and had one other child, aged 3 years.

Dr. Porter Parkinson regarded the case as one of syphilitic meningitis. Syphilitic meningitis most usually affected the base, and often caused hydrocephalus, but he did not think that had happened here. Syphilis might cause more than one lesion in a case, or there might have been some encephalitis as well as meningitis, not acute, but taking the form of a fibrosis.

Dr. H. T. Thompson thought it a case of imperfect development of the brain in which the convolutions were small.

The Chairman, in reply, thought that the condition was due to either meningeal hæmorrhage or encephalitis, or else that it was one of backward development, the so-called agenesis corticalis. The main incidence of the disease was on the prefrontal convolutions, the motor area being very little affected, but that it was affected was shown by the ataxia in the hands and perhaps also by the delay in learning to walk. He thought the child would always be more or less backward, though the amount of imbecility was difficult to estimate at present. She would be able to walk as there was no muscular defect, and as she was now bright her mental condition might become clear.

(1) **A Case of Angeioma of the Right Auricle and Meatus** was shown by Mr. P. Macleod Yearsley. The patient, a girl, aged 13 years, had been under observation for three years, and during that time the growth had increased considerably. The right auricle measured 3 in. by 2 in., while the left was only 2⅜ in. by 1½ in. The growth extended down the meatus nearly to the membranum tympani.

(2) **A Specimen from a Fatal Case of Labyrinthine Suppuration**, and (3) **A Case of Suppuration of the Right Labyrinth which Recovered Under Operation** were also shown by Mr. Yearsley. In the latter case, at the operation, a small erosion led into the external semicircular canal. Instead of laying open the external canal by enlarging the erosion into it, Mr. Yearsley opened up the lowest part of the labyrinth, viz. the vestibule. This not only promised good drainage, but avoided any accidental injury to the facial nerve. He considered that the case demonstrated that it was not always necessary to lay open the whole labyrinth.

A Case of Bronchiectasis and Pulmonary Tuberculosis in a Boy, aged 16 years, was shown by Dr. T. R. Whipham. The former condition apparently supervened on an attack of pneumonia when the patient was fourteen months old. X rays showed a marked opacity of the left side of the chest and scattered patches on the right. There was no polycythæmia.

Dr. H. T. Thompson did not regard it as an ordinary straightforward case of bronchiectasis because of the greater incidence of the disease on one side. The history of the case, and the fact that the heart was displaced towards one side, seemed to suggest as a primary lesion pneumonia of the left side which had been followed by some dilatation of the bronchi. There must have been a secondary infection with tubercle as the bacilli of that disease had been found. He thought that the lung was fibroid.

Dr. Whipham said that the prognosis was a bad one. The boy had been fairly well, but now had become rapidly worse. He thought there was a primary lung condition on which tubercle had been added. Bronchiectasis in children he always looked upon with grave suspicion. He said that bronchiectasis need not always be bilateral. He last year showed a child before The Society with signs on one side of the chest and slight signs also on the other. Post-mortem there was multiple bronchiectasis in one lung and the other was emphysematous.

A Case of Incomplete Congenital Ophthalmoplegia Externa was shown by Mr. Sydney Stephenson. The boy was aged 8 years, well nourished, with adenoid facies. No syphilitic stigmata could be found in the face or teeth. Pupils responded to light and accommodation. There were no corneal opacities and no Hirschberg's vessels: there was incomplete but bilateral ptosis. The movements of both eyes were deficient in all directions. The greatest range was downwards, while the excursions inwards, outwards, and upwards were less than 2 mm. in range. There was no evidence of paralysis of the seventh cranial nerve. The knee-jerks were absent, though the ankle-jerks were present.

The Chairman asked whether Mr. Stephenson had seen cases occurring after birth affecting either the external muscles only, or only the internal muscles, and if so what explanation was offered.

Mr. Stephenson said, in reply, that he could not answer the question except by saying that after diphtheria the internal musculature of the eye might suffer, or sometimes, as in cases published by Dr. Parkinson, the external musculature.

A Case of Persistent Capsulo-pupillary Membrane and Hyaloid Artery with Atypical Development of the Vitreous was also shown by Mr. Sydney Stephenson.

A Girl with Inherited Syphilis was shown by Dr. Porter Parkinson. The case showed the following features; infantilism with want of development of breasts and uterus, with absent catamenia, periostitis, chiefly of tibiæ and ulnæ, synovitis of knee- and elbow-joints, nephritis, and a marked *café-au-lait* complexion.

Dr. Poynton said he had attempted in one of his cases to obtain the spirochæte from the fluid drawn off from the joint, but without success. He had recently had a case of Charcot joint in an adult in which several people were able to demonstrate micrococci in the fluid.

Dr. George Carpenter pointed out that Dr. Parkinson had made no mention of the condition of the ovaries. Infantilism occurred in diseases of the testicle, and in testicles which were immature, but he thought observations were required in regard to similar conditions of the ovaries in which infantilism was a feature of the case. He suggested that Dr. Parkinson should examine the patient's ovaries and report upon their condition.

Mr. Stephenson asked whether the fundus oculi had been examined, and if so, what was found. The remains of interstitial keratitis never wholly disappeared, and probably one could always find in people who had suffered from interstitial keratitis at any time of their life very fine vessels in the depths of the corneæ.

Dr. Parkes Weber alluded to the enlargement and curving of the tibiæ, and thought that cases such as these led some authorities to consider the osteitis deformans of Paget a syphilitic disease.

Dr. Porter Parkinson, in reply, said examination of the fundus of the eyes revealed nothing abnormal, and said he would have the fluid in the knee examined for micro-organisms. The amount of albumin in the urine had not decreased while he was using mercury.

Dr. George Carpenter said that Messenger Bradley, of Manchester, was the first to cure a case of syphilitic nephritis. He (Dr. Carpenter) had given mercury in such cases without curing them, but although they were not cured, he did not think that they were any the worse for the treatment.

A Case of Enlargement of the Upper Jaw in a Boy, aged 9 years and 10 months, was shown by Mr. Philip Turner. He had no pain, but the swelling, which had been noticed three months previously, was increasing in size; it extended upwards to the margin of the orbit, bulging forwards so as to obliterate the canine and incisive fossæ. The alveolar process was larger than on the right side, and the palate was slightly depressed. There was no exophthalmos, and no obstruction to the passage of air through the left nasal fossæ. Egg-shell crackling could be obtained by pressure on the anterior surface. Six teeth were present on each side of the middle line in the upper jaw. On the right side the first permanent molar was present with two permanent incisors, the two temporary molars and temporary canine. On the left side there were two temporary incisors, the temporary canine, two temporary molars, and the first permanent molar. The second dentition was thus considerably delayed. The skiagram showed the two retained permanent incisors on the left side. The lateral incisors had a well-formed root, but that of the central incisor was short and abrupt, while from it a definite shadow was continued in an upright direction. The existence of the swelling with egg-shell crackling suggested the presence of either a growth, probably a sarcoma, or a follicular odontome, frequently known as a dentigerous cyst. The short history suggested the former, but the non-eruption of the incisor teeth, together with the appearance of the central incisors in the skiagram, pointed to the latter as the correct diagnosis.

Mr. Russell Howard thought another possibility was myxomatous tumour of the upper jaw. He had had a similar case in which exactly similar physical signs were present. He took it for a dentigerous cyst, but it was found to be a myxomatous tumour.

Mr. H. S. Clogg said that in addition to the outer wall of the alveolus being protruded, there was bulging of the inner wall also. That seemed to him to favour its being a neoplasm of a sarcomatous nature, especially as it had grown somewhat rapidly.

Mr. Lockhart Mummery suggested that transillumination should be tried before going further. He did not think there was a cyst. He thought the thickening on that side might be due to the arrested eruption of the temporary teeth.

Mr. Turner, in reply, thought there must be something more than retained teeth, as there was definite swelling and the bone could be felt to give way. The root of the incisor was by no means well formed; the lateral incisor root had a more or less normal appearance.

A Case of Multiple Arthritis in a Girl, aged 10 years, was also shown by Mr. Turner. Six months ago there was painless swelling of the right knee-joint; this was followed by a similar trouble in the left knee-joint, both wrist-joints, and the first interphalangeal joints of both hands. There had been no constitutional disturbance, and no pain in the affected joints. Both knee-joints were markedly distended, and the ends of the bones appeared to be enlarged. Thickened synovial fringes could be rolled under the fingers, and grating could be felt on flexion of the knees. The spleen could not be felt, and there was no general enlargement of the lymphatic glands. No history of any previous disease could be obtained, and there were no signs of congenital syphilis. No local source of septic infection was present. Mr. Turner considered the diagnosis lay between congenital syphilis and osteo-arthritis. He favoured the latter diagnosis.

Dr. Whipham thought the case was one of osteo-arthritis in children they occurred rapidly, painlessly, and without temperature. He asked whether skiagrams had been taken. One or two had been shown before The Society, and the lesions were peri-articular rather than in the bones themselves. In the present case he thought there was lipping of the tibiæ.

Dr. Poynton thought the case was very much like those described by Dr. Still in distribution and appearance. He asked whether it would be possible to extract some fluid from the joint and inject it into a guinea-pig.

Dr. George Carpenter regarded it as a case of osteo-arthritis in a child, and he agreed with Dr. Whipham's remarks on the subject.

Dr. Parkes Weber said it would do for a case of the rheumatoid condition in children sometimes called osteo-arthritis, but he was not inclined to exclude congenital syphilis.

The Chairman agreed with the diagnosis of osteo-arthritis, but the case started peculiarly. In children and in young adults the condition, both in the chronic and the acute form, almost invariably began in the small joints of the hands. In the present case it seems to have begun in one knee. In such cases one should be on the look-out for some source of toxæmia, attending particularly to the digestion and excreta.

A Case of Hæmophilia with Adhesions in the Knee-joint was shown by Dr. Kenneth Kellie. When three years of age the boy cut his finger, and the resultant bleeding was difficult to stop. Since then he had suffered from bruises which appeared without any cause, and the right elbow- and knee-joint frequently swelled and became painful. The right knee-joint was in a condition of semi-flexion. He brought the case before the Society in order to hear any opinions as to the treatment of the knee.

Mr. L. Mummery advised that an anæsthetic should be given and an attempt made to break down the adhesions, though there was the risk by so doing of re-starting hæmorrhage into the joint. He advised giving calcium chloride with examination of the blood. If the coagulation time became normal an attempt to break down the adhesions should be made, otherwise he would leave it alone.

Dr. Whipham asked whether any surgeon present thought that fibrolysin would be suitable for this case.

Dr. Poynton thought that if the adhesions were broken down now there would be no danger of bleeding into the joint, and that the limb could be got into position. Calcium chloride had been, in his hands, very disappointing.

Dr. Porter Parkinson agreed with Dr. Poynton as to calcium chloride. He had used fibrolysin in the case of a boy with a large scar in the neck, made by a burn, with satisfactory results.

Abstracts from Current Literature.

Medicine.

Acute encephalitis in children (*'Arch. de Méd. des Enf.,' October, 1907, p. 577*).—**Comby.**—Acute encephalitis, which until recently had often been confounded with meningitis, may occur at any age, but is especially frequent in childhood, the highly vascular organ presenting a special vulnerability. The lesions may be diffuse or circumscribed. Acute encephalitis may be associated with poliomyelitis or even with polyneuritis. It often succeeds an infectious disease, especially influenza. Nervous predisposition plays a certain *rôle* in the ætiology. The onset is sudden, being ushered in by violent convulsions, which are often epileptiform in character and may recur several times. Coma may supervene, with stiffness of the neck muscles or the meningeal shriek. There may be also spastic or flaccid paralysis, tremors, choreo-athetotic and ataxic movements, aphasia and mutism. Among the sequels intellectual backwardness, idiocy, and epilepsy may be mentioned. Sometimes, on the other hand, there is an exaltation of certain faculties at the expense of the others, *e.g.* the memory may acquire a prodigious development. Three forms of acute encephalitis may be distinguished: (1) Benign forms which have no sequelæ; (2) grave forms which leave behind palsies, contractures, spasms, or tremors which are sometimes curable; (3) very severe forms, which are either fatal or entail incurable infirmities, such as cerebral softening or epilepsy. On the whole the prognosis of acute encephalitis is better than that of meningitis due to the tubercle bacillus or other micro-organisms. In the former complete or incomplete recovery is the rule, in the latter it is the exception. The diagnosis is to be made by lumbar puncture. Whereas in meningitis there is always a leucocytic reaction, in encephalitis there are no cellular elements in the cerebro-spinal fluid. Treatment consists in the employment of warm baths, hot packs, ice to the head, leeches to the mastoids, sedative rectal injections, and later on the exhibition of potassium iodide. The diet must be restricted to liquids. J. D. Rolleston.

The nourishment of the syphilitic infant (*'Journ. de Med.,' January, 1908*).—**Vaillant** says the treatment of the syphilitic infection is not all that is necessary for the cure of the infant; it is necessary to provide for its "inaptitude for life." The premature infant, owing to weakness of the muscles of suction, takes too little nourishment, and so must be fed more frequently, and its secretory glands secrete and digest badly; owing to the liver performing its duties badly fats are not properly utilised. Gastroenteritis is frequent. Natural nourishment is imperative, and if not enough milk be taken in the usual way it may be drawn off and given to the infant by gavage. If natural feeding is impossible some other food must be given.

Ass's milk is similar in composition to that of the woman, and is well digested, but it will not stand boiling, hence the conditions of its collection must be carefully supervised. Goat's milk is rich in casein and hence indigestible. Cow's milk sterilised seems to be the best, given in proper quantity and dilution, with great care in the cleansing of all the vessels into which it is placed. J. PORTER PARKINSON.

Relations of the pseudo-peritoneal form of infantile purpura to scarlatina ('*Soc. Méd. des Hôp.*,' *November* 8, 1907; '*Gaz. des Hôp.*,' 1907, *p.* 1543).—**Griffon** and **Lyon-Caen** related a new case of this nature similar to the one recently described by Guinon and Vielliard. Two days after the onset of scarlet fever in a boy, aged 13 years, gastro-intestinal disturbance, peritonism, intestinal hæmorrhages, and cutaneous purpura appeared. The patient was treated by alimentary administration of adrenalin and recovered. ERNEST JONES.

A new case of congenital myotonia ('*Gaz. des Hôp.*,' *December* 10, 1907, *p.* 1683).—**G. Leclerc** describes another case of Oppenheim's disease, of which there are seventeen cases on record; four of these have died and two were examined post mortem. The patient was a girl, aged 4 years, in whom weakness had been observed since the second month of life. There was no paralysis and all movements could be performed perfectly. In spite of this the child could neither stand nor sit up, on account of the extraordinary degree of atonia. All the joints could be hyperextended, and the muscles were particularly flaccid but not wasted; unfortunately the electrical reactions were not tested. As in all the previous cases the special senses were intact, and also the sphincters, while the deep reflexes were absent.

ERNEST JONES.

The relation of tubercular bronchial glands to chronic pulmonary tuberculosis ('*La Clin. Infant.*,' *December*, 1907, *No.* 23, *p.* 709).—**C. Leroux** communicated his view on this subject to the Acad. de Méd., of which the following is an abstract: (1) Chronic pulmonary tuberculosis in children has two modes of origin: (*a*) glandular, which begins clinically in the tracheo-bronchial glands, and after a longer or shorter time reaches the apex of the lung; (*b*) pulmonary, which begins first in the apex of the lung and is accompanied secondarily by disease in the glands. (2) Glandular tuberculosis is the apanage of the very young from birth to eight or ten years; it is most frequent between the ages of one and five years. Pulmonary tubercle is reserved for older children, and is most frequent from twelve to fifteen years. (3) When both glands and lung are affected clinical diagnosis is more delicate than when the lung alone is affected by reason of the conduction towards the apex of inspiratory and especially expiratory bronchial sounds; thus harsh expiration is sometimes a sign of glandular enlargement, while feeble inspiration is of more import as regards the condition of the lung itself. (4) The value of radioscopy is great in the glandular affection, either uni- or bilateral, even without clinical signs. It is of hardly any value when the disease commences in the lung itself. As the glandular lesion is the first localisation in infantile tuberculosis it should, therefore, be searched for by radioscopy in young children before the school age. (5) In view of the long truce which exists before the glandular affection reaches the lung and the energetic defence which in young children is opposed to its extension, there is every chance of the disease being eradicated by sea-air sanatoria, provided the stay there is long enough. VINCENT DICKINSON.

Pathology.

Verrucæ plantaris (*'Boston Med. and Surg. Journ.,' December* 12, 1907). —**Bowen** states that verrucæ plantaris are very common among boys and young men. He regards the condition as probably infective, slight lesions from irritation affording an entrance for infecting organisms. The tumours are commonly multiple and occur on either the palm or the sole. Microscopically the growths show at the periphery the ordinary structure of a wart—papillary enlargement with downgrowths of the rete, and a marked hyperkeratosis. The granular layer is much increased in thickness. The centre of the tumour, however, shows the characteristic changes, a vacuolation of some of the rete cells, which causes them to assume a rounded form and to appear larger than their neighbours, and, as the vacuolation becomes more marked, a fusion of some of the cells, forming an irregular network, in which are found masses of kerato-hyaline substance. In many of the nuclei small round, highly refractile bodies, sometimes concave or crescentic, were found; they were stained by acid reagents and were possibly the results of cell-degeneration, though their appearance was suggestive of some form of protozoon. T. R. Whipham.

Infantile goitre (*'Lyon Médicale,' December*, 1907, *No.* 49, *p.* 933).—**J. Fabre** and **L. Thevenot** describe five varieties: (1) Vascular goitre, telangiectasis, frequently congenital but transitory, the gland attaining normal dimensions in a few weeks; (2) the pure hypertrophy of Wölfler, purely epithelial, also very frequent. The three other varieties are rarer. (3) Encysted adenoma. Only Müller's two cases are known; (4) fibrous goitre, an abundant proliferation of connective tissue; (5) cysts. Goitre in the newborn infant is much more frequent than is usually believed, and the serious results which it causes, too often confounded with those of hypertrophy of the thymus, call for surgical treatment. From the obstetrical point of view it is rarely a cause of difficult labour; as its size tends to keep the head in a position of extension it may favour brow or face presentations, however, and tedious labour, but in the large majority of cases parturition is normal. The frequent occurrence of goitre in the newborn shows that it must be, like hernia, very often a congenital affection.

Vincent Dickinson.

Congenital stenosis of duodenum (*'Arch. of Pediat.,' November*, 1907, *p.* 813).—**Shaw** and **Baldauf** record a case in a girl who died thirteen days after birth. The child seemed healthy and weighed 7½ lb. at birth, but by the tenth day had lost 2¼ lb. Repeated vomiting occurred daily, but bile was found in both the vomit and the stools, which suggested that the condition might be spastic, and was the cause of surgical intervention being postponed. The vomiting diminished after lavage. At the autopsy a stricture was found 5 cm. below the papilla of Vater. The duodenum above the stricture measured 9·4 cm. in its greatest diameter. Out of 185 cases of congenital occlusion of the intestines collected by Kuliga, 46 occurred in the duodenum. The condition has been attributed to intra-uterine peritonitis of tuberculous or syphilitic origin, to intra-uterine enteritis, to pressure from without, *e.g.* by enlarged liver or pancreas, to hypertrophic valvulæ conniventes or to the vitelline duct, but in numerous cases no cause has been found. An hypothesis applicable to all cases is that atresia is due to non-absorption of the hyperplastic epithelium of the embryonic duodenum, and stenosis to its partial absorption. J. D. Rolleston.

Therapeutics.

Treatment of tuberculous peritonitis ('*Gaz. deg. Ospedali Milan,*' *September*, 1907).—**Bussi** relates a series of cases in which he was able to cure tuberculous peritonitis by means of medical measures alone, by tapping the effusion and painting the abdominal wall with iodine and guaiacol, supplemented by subcutaneous injection of a solution consisting of iodine 1 grm., potassium iodide 10 grm., guaiacol 20 grm., and glycerine 80 grm. In some instances an iodised gelatine preparation was given by the mouth later. The results were good in every instance. In the author's opinion iodine has an almost specific action on tuberculous peritonitis. In one severe case recovery supervened on tapping and insufflation of heated air into the abdominal cavity, followed by a tight bandage and the administration of iodised gelatine. In another case, a girl, aged 16 years, no benefit was derived from medical measures, and the peritoneum was drained and wiped dry. Typical tubercles were found over the parietal and visceral peritoneum. After the operation the iodine and guaiacol applications were resumed, and a year later the child seemed quite well.

T. R. Whipham.

Buttermilk in pathological conditions of early infancy ('*Lyon Médicale,*' *November*, 1907, *No.* 47, *p.* 837).—**Péhu.**—Those who are interested in this subject will find a very full bibliography at the end of the paper. The indications for its administration are as follows: It may be given with considerable chance of success in *gastro-intestinal dyspepsias,* when there is no fever, when the inflammatory signs, whether infective or toxic, have abated, and when attempts at other methods of feeding have been markedly inefficacious; the author, however, insists strongly that the patient must be free from feverishness to expect any useful result. In *atrophy*, following former attacks of gastro-enteritis, and due to glandular degeneration still capable of remedy, provided that too long an interval has not elapsed and the general condition not seriously changed. In *congenital debility* and *prematurity*. And lastly, in *dermatosis* and infantile toxic dermatitis (especially eczema). On the other hand nothing can be expected from buttermilk in *acute conditions*, where the sensitiveness of the digestive tract is still so great that no food of complex composition can be tolerated; nor in profound *cachexia* due to syphilis, tubercle, suppuration, or broncho-pneumonia. In all cases where there is manifest intolerance for ordinary food buttermilk may be tried with caution, paying particular attention to the temperature, the state of the stools and general condition of the infant. It must be suspended at once if the temperature rises above 39° C., if the general state is bad, vomiting copious and stools frequent, but no notice need be taken of a moderate or insignificant amount of fever. Its good results are shown by improvement in the vomiting and in the condition of the stools, which become *alkaline* (an interesting fact since buttermilk is acid), while the infant rouses from his torpid state. The explanation of the action of buttermilk is to be found in the following facts: (1) Its poverty in fatty matter renders it more easily digested, churning having extracted a large part of the butter; (2) the casein, by churning, is reduced to very fine particles easily assimilable; (3) the presence of the hydrocarbon (rice or potato flour) is efficacious; (4) the presence of lactic acid in raw buttermilk produces favourable changes in the bacterial flora of the intestines.

Vincent Dickinson.

Otology, Laryngology and Rhinology.

On the late effects of tracheotomy (*'Bolle. d'Malatt. del Orrechio,' May*, 1907).—**Martuscelli** and **Ciociolo** (Naples) are responsible for this experimental and histological study. Preliminary researches were made on dogs, and these are described by the authors after a lengthy review of the literature. Of the experiments, three are described in detail, including the results of autopsies, with illustrations showing the histological appearances. The authors' conclusions are that tracheotomy is often the cause of more or less diffuse ulceration, particularly at the sites corresponding to the lower extremity of the cannula and of the tracheal opening; to these changes may be added the formation of polypoid new growths. The general consequences of tracheotomy are broncho-pneumonia, paralysis of the posterior crico-arytenoids, aphonia, etc. MACLEOD YEARSLEY.

Grave and rapid endocranial complications in a case of acute purulent otitis media; operation; cure (*'Boll. Orrechio, Eolo, Naso, Florence,' July*, 1907).—**Tanturri** describes the case of a girl, aged 12 years, who was advised to use a douche for naso-pharyngeal catarrh. After the second douching she had acute right otitis media. When she came under Tanturri's care she was comatose with ocular paralysis (abducens), Cheyne-Stokes' respiration, hyperpyrexia, and indicanuria. Abscess in the middle cranial fossa was found in addition to suppuration in the mastoid antrum and cells. The patient made a good recovery with "normal" hearing on the affected side. MACLEOD YEARSLEY.

Surgery.

Surgical treatment of hydrocephalus (*'South Calif. Pract.,' December*, 1907).—**H. M. Sherman** reports the case of a child, aged $2\frac{1}{2}$ years, whose head measured 55·5 cm. in circumference. In October, 1906, 50 c.c. of clear cerebro-spinal fluid was drawn off from the right lateral ventricle by tapping; fourteen days later 60 c.c. were withdrawn, after which the child appeared brighter. The following January the skull was opened and a rubber drain passed into the left ventricle, the dura mater being sutured over the opening: this drained well, but the fluid collected under the dura and produced a definite fluctuating swelling. A rubber drain was then passed through the dura, to try and drain it into the subcutaneous areolar tissue. The drain acted, but no fluid seemed to escape into the subcutaneous tissue. The writer then opened the chest between the first and third ribs, tucked a rubber drain into the sac and pulled the other end under the skin to the lower end of the drain track behind the ear; this, however, was unsuccessful, as no evidence was got of drainage into the pleura. These operations lasted about two months, and meanwhile the child had been wasting and developed pressure sores, and had become blind. Finally death occurred. At the necropsy it was found that there was a large cyst protruding from the fourth ventricle which could not be drained owing to blocking of the aqueduct of Sylvius and the foramina of Magendie, so that the success of any surgical procedure was impossible.

J. PORTER PARKINSON.

Renal sarcoma in children (*'Arch. of Pediat.,' December*, 1907, *p*. 922). —**W. Shannon** records a case in a boy, aged $3\frac{1}{2}$ months. At three months the abdomen became enlarged, and marked dyspnœa, due to pressure on his diaphragm, and great restlessness soon developed. A large cystic tumour, weighing about $3\frac{1}{4}$ lb. and about 8 in. in diameter, was found on operation. Histological examination showed that the growth was an adeno-carcino-sarcoma. The child died eight hours after the operation.

J. D. Rolleston.

Congenital goitre (*'Pediatrics,' December, 1907, p. 747*).—**Peterson** reports the case of a child who, at the age of five weeks, was operated on for a swelling anterior to the sterno-mastoid extending from below the ear to the clavicle. Four days later tetany developed, and continued until thyroid extract was given. The tumour was found to be a congenital goitre. There was some difficulty in breathing for a short time after birth, but this had subsided before admission to hospital. J. D. Rolleston.

Cavernous angioma cured by operation (*'El Siglo Med.,' November 23, 1907*).—**Arquellada** operated in this case on a child, aged 8 months, with an extensive tumour in the nose. The tumour was rapidly removed, two vessels only requiring ligature, and the flaps were fashioned and brought together by sutures. A photograph taken some months later showed that the æsthetic result was excellent. He prefers extirpation to all electrical procedures, which consume so much time, often with indifferent results. If the operation is done rapidly there is no reason to fear much loss of blood. M. D. Eder.

Round=celled sarcoma (*'Allgemeine Wiener med. Zeitung,' December 10, 1907*).—**Pollak** related the following case of a child, aged 3 years, who had hitherto been in good health. Last August the child knocked its eye at the edge of the table. Fourteen days later a slight suffusion was noticed in the left lower lid. This spread rapidly; both lids and conjunctiva were suffused. The same condition appeared in the right eye a fortnight later. The skull increased in size, and there followed loss of appetite, weakness and pallor. Examination at hospital revealed the presence of symmetrical swellings on both temples and others on the sides of the skull. The right submaxillary glands were enlarged. The liver was much increased in size; urine, no albumin, abundant urobilin. A double papillitis was also present. The later course of the disease made it clear that it was a case of orbital malignant tumour with metastasis in the liver. A post-mortem confirmed the diagnosis and showed, in addition, a tumour in the neighbourhood of the left kidney, separated from it by the capsule, the organ being itself quite free. This was very possibly the primary growth, the growths in skull, liver, and glands being secondary.

M. D. Eder.

Foreign body in the right bronchus (*'Wien. klin. Rundschau,' November 24, 1907*).—**Marschik** presented a boy, aged 5 years, who had inspired a fish-bone. An attempt had been unsuccessfully made to remove it with Schrötter's forceps. Then a bronchoscopic tube of 6 m. in internal diameter was introduced. The reflex of the bone was seen, and the foreign body was removed with forceps. Despite the success in this case the author recommends tracheotomy as the safer procedure. There is risk of œdema of the glottis with the use of the tube. At all events, if bronchoscopy and extraction is not successful at the first attempt resort should, without further manœuvre, be had to tracheotomy. M. D. Eder.

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Original Articles.

THE SYMPTOMS AND DIAGNOSIS OF JUVENILE TABES.

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By way of contribution to the present symposium on the manifestations of syphilis in children, I propose shortly to discuss the clinical diagnosis of a condition which, though undoubtedly rare, is of unusual interest and of no little importance. In doing so I shall base my remarks partly on the notes of five cases I have observed personally, an account of which will probably be published later, and partly on the cases recorded in the literature. The published cases on record will not be reviewed, however, as this has already been fully done by a number of foreign writers. The dates of these reviews are as follows: Hildebrand (10) 1892, Raymond (30) 1897, Kalischer (14), 1898, Dydynski (5) 1899, Von Halban (9) 1901, Idelsohn (13) and Von Rad (29) 1902, Linser (20), Pourreyron (28) and Marburg (21) 1903, Skala (33) 1904, Lasarew (17) and Hirtz and Lemaire (11) 1905. Of these, the most complete and critical are given by Dydynski, Von Halban, Marburg, and Skala.

(A) General Diagnosis.

The first question that arises is that of the *incidence* of the affection, for on a knowledge of the prevalence of diseases at different ages an *à priori* probability arises which influences our judgment to a greater extent than is sometimes recognised.

There is no question but that juvenile tabes is a very rare affection, and, as will be pointed out presently, so great is the difficulty of diagnosis between it and similar conditions that many authors, including Gumpertz (8), Kalischer (14), Marie (22), and Von Leyden (19), have thrown great doubt on its existence at all. It is true that in years gone by many cases of other affections, particularly cerebro-spinal lues and hereditary nervous diseases, have been erroneously recorded under this title, and, although some of the older cases, notably one published by Von Leyden (18) in 1863, may have really been cases of juvenile tabes, it was not until Remak's work (31) in 1885 that any undoubted cases were placed on record. It is further true that there is no single physical sign of juvenile tabes that is pathognomic of the condition, but this is also true of most other nervous diseases, including adult tabes, so that this fact in itself does not, as some writers maintain, exclude the possibility of its existence. The most important gap in our knowledge of the subject at present is the fact that no diagnosis of juvenile tabes has yet been confirmed by autopsy. Nevertheless, it is certain that in children a clinical picture sometimes occurs which is quite indistinguishable from that of adult tabes, and furthermore, one which is met with in no other affection of the nervous system, and on this ground we are surely justified in naming it "juvenile tabes." It would indeed, be a remarkable phenomenon if such an affection did not exist, in view of the comparative frequency with which cases of general paralysis, abundantly proven post mortem, occur in children who have inherited syphilis.

It is thus difficult, if not impossible, to determine how many actual cases have been recorded. Hildebrand, in 1892, criticised some twenty or thirty cases that had been recorded under the title of juvenile tabes, and considered that ten of these were correctly placed. Raymond, seven years later, gave about the same number. Dydynski (5), in 1899, admitted only seven cases in this class. Von Halban, two years later, counted twelve true cases, but Brasch (4), in the same year, considered there were only seven. Linser, in 1903, raised the number to twenty-one certain cases, and Marburg, in the same year, to thirty-four. In 1905, Lasarew restricted the number to twenty-three, but Hirtz and Lemaire (11) reckoned, with confessedly little stringency, forty-six. After reading the accounts of the individual cases and of others since recorded, I should be inclined to count at least thirty as being highly probable cases.

One thing at all events is certain, namely that juvenile tabes is, at least, as uncommon in comparison with juvenile paralysis as adult tabes is in comparison with adult paralysis. Personally I have seen more than ten times as many cases of juvenile general paralysis as of juvenile tabes, and this seems to be a usual experience.

With regard to the *sex* incidence, juvenile tabes, like juvenile paralysis, affects both sexes to an equal extent—an easily comprehensible fact, inasmuch as syphilis does not show the same predilection for male children as it does for male adults. Indeed, in some statistics the females predominate. Thus Lasarew found 13 girls to 11 boys, Marburg found 19 girls to 15 boys, Hirtz and Lemaire (11) found 26 girls to 19 boys. This, however, is probably only coincidence.

As to the *age* of occurrence, we have to distinguish between cases due to inherited from those due to acquired syphilis. Most cases of the former group show the first manifestations after the age of twelve, commonly about puberty. It is, however, met with below this age. The youngest case on record, one recently recorded by Mingazzini and Baschieri-Salvadori (24), was only three years old when the symptoms began; Dydynski (6) recorded a five-year-old and Hirtz and Lemaire (12) a six-year-old case. On the other hand tabes due to inherited syphilis has several times developed only in adult life, and Bertolotti (2) has recently recorded a case that began at the age of forty.

The youngest case of tabes due to acquired syphilis is one recorded by Marburg that developed at the age of eight, the child having been infected by a nurse when two years old.

We come next to the question of *syphilis*, for in 1908 one need hardly discuss the possibility of tabes arising apart from previous syphilitic infection. What is the value of a history of syphilis in the diagnosis of a suspected case? To begin with, it is evident that a negative history is of no value whatever, and should in no way affect our judgment in the presence of physical signs of the affection; an instructive case was published by Kalischer (15), in which mother and daughter showed unquestionable signs of tabes, although no evidence of syphilis was forthcoming. The reasons for this in the adult are many and well known, but there are some additional ones that apply to children, and which may briefly be mentioned. The child itself may have acquired syphilis at an early age—a far from uncommon occurrence—and the parents may thus give a negative personal history, unless they themselves become secondarily infected as happened in a case published by Nonne (26).

In this remarkable case a child was infected at the age of five, through sleeping with a lodger, and soon after conveyed the infection to his father and mother by kissing; later both the parents and the child developed tabes. In another case recorded by the same author the mother was infected by wet-nursing a syphilitic infant, and thus infected her own infant, who later developed tabes. The proportion of cases due to acquired and those due to inherited syphilis naturally varies with the age according to which juvenile tabes is defined. Of Lasarew's 23 cases, two were certainly due to acquired syphilis; in one, recorded by Kutner (16), the child was infected at the age of five by the kiss of a prostitute; in the other, recorded by v. Halban, the child was infected when four months old by its nurse. Of Marburg's 34 cases, four were due to acquired syphilis; in another case which he describes, the child was infected by its nurse. Thus the route of infection may be very difficult to trace, and the possibility of infection can never be excluded. Still, in most cases plain evidences of syphilis are discoverable. Marburg states that a history of syphilis in the parents was found in 22 of the 34 cases in his series; Linser states that evidence of syphilis in either the parent or child was certain in 17 out of 21 cases, and probable in two more.

Another and very interesting matter in this connection is the great frequency with which one or other parent shows signs of meta-syphilis, either tabes or general paralysis. I find in the literature that no fewer than 23 parents of patients with juvenile tabes themselves suffered from either tabes or paralysis,* and in one case I have personally observed the father had advanced tabes. In one of Nonne's cases (27) a sister as well as the mother had tabes. The same feature is seen with cases of juvenile general paralysis. Thus Alzheimer (1) noted that of 41 cases of this affection, in 7 instances one of the parents had either tabes or general paralysis; similar figures are given by other observers.

Facts such as these naturally raise the question of a family predisposition to meta-syphilitic affections, and many writers, notably Von Halban and Nonne (27), strongly urge its importance. Nonne brings many interesting instances in support of this view. He thus mentions the case of a brother and sister who both developed tabes, and two twin brothers who were infected with syphilis within two years of each other, and who developed tabes at the same date. Against this, however, is the fact, which will be referred to later, that the arrangement of the cases shows a distribution different from that of any hereditary transmission that we know of.

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* These are distributed as follows: In two cases published by Dydynski (7 and 5) and one each by Brasch and Remak the father had tabes; in one each by Nonne (27), Kalischer (15), and Wertheimer (35) the mother had tabes; in one each by Linser, Von Halban, and Bloch (3) the father had general paralysis; in one by Westphal (36) the mother had general paralysis; in one each by Nonne (26) and Roinheld (32) both father and mother had tabes; in one by Nonne (26) the father had tabo-paralysis and the mother tabes; in one by Von Halban the father had tabes and the mother general paralysis; in one each by Mingazzini and Baschieri-Salvadori and Kutner the father had general paralysis and the mother tabes.

We come now to the clinical features presented by these cases, and the first remark necessary to make is that no symptom or sign occurs in adult tabes that has not also been described in juvenile tabes—a point which has been dealt with at length by Skala. This applies even to the so-called complications, such as perforating ulcer or Charcot's joint, of which Nonne (25) has described an example. There are, however, certain pecularities that distinguish juvenile from adult tabes, and I shall briefly mention these, for to detail either the clinical or the rarer signs of tabes in general would obviously be out of place here. These pecularities refer partly to the course of the disease and partly to the relative frequency of different symptoms.

The most striking feature about the *course* of juvenile tabes is its essential chronicity. No cases of acute and even fulminating tabes, such as are occasionally met with in the adults, have been described in children, and all observers who have had the opportunity of watching the cases over long periods confirm this feature of chronicity. Thus Mendel (23), in 1895, described in detail a case that had been published, first by Remak, in 1885, and then by Hildebrand, in 1892; during this period of ten years the advance in the disease was strikingly slight. The passing out of sight of cases that is facilitated by this chronicity may partly account for the absence of autopsies on the affection. Another feature is the frequency with which the affection is complicated by general paralysis, leading to a clinical picture which Mott has aptly christened tabo-paralysis. Strümpell (34) published a typical instance, twenty years ago, in which the diagnosis was confirmed at autopsy, and a number of cases have since been described. The reverse occurrence, namely, the complication of juvenile general paralysis by tabes, is still more frequent, and instances are by no means uncommon in our asylums. Alzheimer has shown that this takes place much more frequently in juvenile than in adult cases of general paralysis.

Some *symptoms* seem to be more frequent or prominent in the juvenile cases, others rarer or less obtrusive. Of the former group most prominent is the frequency with which *vesical* symptoms occur; these were present in 20 out of the 34 cases in Marburg's series, in 14 out of the 23 in Lasarew's series, and in more than half of the cases in Hirtz and Lemaire's larger series. More important is the fact that they are often the earliest symptom of the disease, being so, for instance, in 7 out of Lasarew's 23 cases. Retention is rare, incontinence being the usual form. This cannot be distinguished from common enuresis, and, as here, the incontinence may be manifested by either day or night, though the former is by far more often the case.

Eye symptoms are also common, particularly amblyopia. This seems to be a more frequently initial manifestation than in adults, and was the cause for seeking medical advice in 14 per cent. of Hirtz and Lemaire's series. Often atrophy was observed in 12 cases, and excluded in only one out of Marburg's series of 34. The Argyll-Robertson pupil is also often met with, and was present in 20 out of 23 cases in Lasarew's series, and in 25 cases in Marburg's series, which is near the percentage found in adult tabes. Aniscoria was present in 13 cases of the latter series, and defective accommodation in 3. Oculo-motor paralyses are usually late symptoms.

Headache also seems to be a particularly common symptom at the onset, and was the reason for seeking advice in 5 out of Lasarew's 23 cases. Severe migraine and neuralgia have also been several times observed early in the course of the affection, and special stress has been laid on this by Von Halban.

Lightning *pains* were present in 21 out of 23 cases in Lasarew's series, in 21 out of 34 of Marburg's, and in 15 out of 46 of Hirtz and Lemaire's. This discrepancy is due to the variable importance that different authors have attached to the symptom in deciding whether or not to include a given case in their series. My impression is that pains occur about as often as in adult tabes, *i. e.* in nearly two thirds of the cases. On the other hand, girdle pains seem to be rarer in the juvenile cases. They were present in 4 out of Lasarew's 23 cases, and in only 4 out of Marburg's 34 cases; this is considerably below the proportion that is met with in the adult (about 45 per cent).

Sensory changes are found more often than might have been anticipated, having regard to the difficulty of observation in children—a fact emphasised by Von Halban. Hypoæsthesia occurred in 24 and hypoalgesia in 7 out of Marburg's 34 cases; hypoæsthesia or hypoalgesia occurred in 21 out of Lasarew's 23 cases, and paræsthesia in 7.

A notable feature is the rareness with which *ataxy* is at all marked, and this fact constitutes a useful aid in diagnosis. Ataxy was present in only 11 out of Marburg's 34 cases, 7 out of Linser's 21, and in 15 out of Lasarew's strictly selected 23 cases. The proportion of one third given by the first two authors is striking in comparison with the two thirds which is the proportion in adults, especially when we consider that the symptom is an easy one to observe in children. Further, the ataxy when present is usually slight, and rarely extends to the upper arms. In only 2 out of Hirtz and Lemaire's 46 cases was the ataxy marked. Still, this rule has its occasional exceptions; Von Rad, Kutner and Lasarew have each recorded cases in which the ataxy was an early and evident symptom.

Crises were once thought to be rare in juvenile tabes, but this is probably not so. They occurred in 17 per cent. of Lazarew's series, 19 per cent. of Hirtz and Lemaire's, and in 20 per cent. of Marburg's which is fewer than is the case with adults, as here gastric crises are the commonest form and laryngeal the next. Trophic symptoms were also said to be rare, but many cases showing them have been recorded.

Of the remaining tabetic signs there is nothing special to be said. Romberg's signs has been seen in three quarters of the cases (Lasarew, Marburg), and Westphal's in about 90 per cent. (Lasarew, Marburg).

It is clear that much more extensive experience of these cases is necessary before the relative frequency of the above symptoms can be at all accurately determined. At present the most probable features distinguishing the symptoms of juvenile tabes from those of adult seem to be the early and frequent appearance of urinary incontinence, of headache and of amblyopia, the comparative rareness of girdle pains, and the late onset of ataxy which is usually little marked.

The chief features which distinguish juvenile tabes from other affections that resemble it will be mentioned in the next section. The signs on which most reliance may be placed are, as follows from the foregoing, exactly the same as in the adult. Of these, especial stress is to be laid on the Argyll-Robertson pupil, the loss of the Achilles' jerk followed by that of the knee-jerk, primary optic atrophy of a characteristic type, the typical lightning pains, and the presence of lymphocytosis and excess of albumin in the cerebro-spinal fluid. This latter sign, which is certainly the most constant and most valuable in the diagnosis of tabes, has been examined—and found to be positive—in only one of the juvenile cases, by Hirtz and Lemaire (12). To judge from the analogy of adult meta-syphilis and of juvenile general paralysis, this should, however, in the future be an invaluable diagnostic point.

(B) Differential Diagnosis.

It is unnecessary to mention all the affections with which juvenile tabes can be confounded, and I shall discuss only the three which present the greatest difficulty in this connection.

"Pseudo-tabes," due to certain varieties of multiple neuritis, and sometimes to diabetic changes in the spinal cord, is rare in children, and is not very difficult to recognise. Tabes differs in the presence of the typical eye changes, in the absence of paralysis and wasting of muscles with electrical changes, in the distribution and character of the sensory changes, and in the characteristic lightning and girdle pains with the various crises.

A more serious cause for embarrassment is the possibility of certain hereditary diseases of the spinal cord. The classical picture of Friedreich's disease should not be difficult nowadays to distinguish from juvenile tabes; the main points of difference are the speech changes, the nystagmus, Babinski's plantar sign, the choreiform tremor—all of which sharply separate Friedreich's disease from tabes, the early and marked ataxy which is of the kinetic type as contrasted with the static type of tabetic ataxy, the irregular distribution of the sensory changes as contrasted with their root distribution in tabes, the rareness of bladder symptoms, and the non-appearance of the Argyll-Robertson sign, or of oculo-motor palsies. Some writers have added optic atrophy to this list, but it must be remembered that this is sometimes met with in Friedreich's disease, as also in the Marie variation, though, it is true, not so often as in juvenile tabes. While this differentiation is fairly easy to make, however, this is not so true of atypical forms of Friedreich's disease, and of allied hereditary cord affections of which there exist such an extraordinary variety. It may be said that these allied types are separated from Friedreich's disease more by the different grouping of their symptoms than by the appearance of fresh ones, so that on the whole the points given above still serve; oculo-motor palsies, however, may occur in some of these types. Thus the three main points to be relied on are—(1) the absence of the Argyll-Robertson pupil, (2) the absence of cerebro-spinal lymphocytosis, and (3) the family arrangement of the cases. In some of the cases of juvenile tabes referred to above several members of the same family were affected, but the arrangement of the cases characteristically differs from that met with in hereditary diseases. Thus the large majority of hereditary affections are commoner in the male sex, and if we find, say, three cases confined to one sex in a family, particularly to the male sex, we should do right strongly to suspect such an affection. Again, such affections are not commonly transmitted through the father, whereas in the cases of family tabes the father is more often affected than the mother. Further, it is extraordinarily rare for both parents to be affected with the same type of hereditary disease, unless they both spring from the same stock, whereas this is not rare with juvenile tabes. Typical instances of each would be father and daughter affected with tabes, son and mother's brother by a hereditary affection.

We come finally to the most difficult part of the diagnosis—the distinction between juvenile tabes and juvenile cerebro-spinal lues, particularly the syphilitic pseudo-tabetic variety. Here even the Argyll-Robertson sign and cerebro-spinal lymphocytosis partly fail us, for both may occasionally be met with in the second affection. The main features that determine a diagnosis of juvenile tabes are marked lymphocytosis, steady, chronic course, and absence of some features that characterise nervous lues; the Argyll-Robertson and Westphal signs are also presumptive evidence of tabes, since they are much commoner, particularily the second, in this affection. Cerebro-spinal lues, on the other hand, is marked by an irregular, intermittent course with sudden appearance of paralysis—notably monoplegias and hemiplegias—that do not occur in tabes; the signs are often incomplete, transitory and non-symmetrical; multiple implications of cranial nerves are commoner than in tabes. The mental state is in most cases greatly deteriorated, whereas this never occurs in tabes unless general paralysis with its characteristic signs supervenes; the symptoms are to some amenable to iodide treatment, whereas, of course, those of tabes are not; a number of symptoms, such as nystagmus, speech affection, evidences of implication of the upper motor tract, excitation phenomena, such as tremors, cramps, twitchings, convulsions, occur which are not found in tabes.

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INHERITED SYPHILIS AS A FACTOR IN THE ÆTIOLOGY OF MENTAL DEFECT IN CHILDREN.

By G. E. Shuttleworth, M.D.,
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I fear my contribution belongs rather to the ancient history of the subject than to the era of bacteriological pathology in the light of which we now view the problems of inherited syphilis. Some twenty years ago I summarised (for a paper contributed to the Ninth International Medical Congress at Washington) the views held by such authorities as Mr. Jonathan Hutchinson, the late Dr. Langdon Down, of Earlswood, Dr. Fletcher Beach, then of Darenth, and my own experience in two large institutions for imbecile children, showing that in this country at any rate the *rôle* of parental syphilis was surprisingly small, so far as could be ascertained from a scrutiny of the histories and characteristics of the inmates of British imbecile asylums; that is to say, that it figured as an ætiological factor in less than 2 per cent. of the cases. In a later investigation of case-book records of 1200 patients who had been under my care at the Royal Albert Asylum (for an article on the "Ætiology of Idiocy," published* in 1892) I found the percentage with parental history or personal evidence of syphilis to be 1·33. Dr. Fletcher Beach, dealing with 1100 cases at Darenth on the same lines, found that his percentage worked out at only 1·01. Thus in an aggregate of 2380 cases at the two asylums, in which histories had been fairly well ascertained, we were unable to find evidence of the existence of syphilitic taint in more than 1·17 per cent. of our patients.

In a later investigation, made in 1898 by Dr. Telford Smith, my successor at the Royal Albert Asylum (with the aid of Dr. Coupland) for the special purpose of ascertaining the frequency with which inherited syphilis might be regarded as an ætiological factor in the 580 cases then resident in the institution, he found that only in three cases was there an acknowledged history of congenital syphilis and only eight cases presenting stigmata of the disease.† He expresses the opinion, however, in which I fully concur, that although the percentage of syphilitic idiots and imbeciles found in asylums is extremely low, it does not follow that parental syphilis has but little to do with the production of mentally defective offspring, considering how high is the infantile mortality of children with this taint, and that as a rule institutions for imbeciles only receive those who have attained the age of five or six years.

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* Hack Tuke's 'Dictionary of Psychological Medicine,' vol. ii.

† 'Brit. Med. Journ.,' October the 15th, 1898.

More recently (viz. in 1902) Dr. Tredgold (L.C.C. Research Scholar in Insanity) made a careful examination of 150 juvenile "aments" in metropolitan asylums, in which he was able personally to investigate the family histories, and found amongst that number only four (= 2·5 per cent.) in which syphilitic taint was manifested by characteristic signs, and five (= 3 per cent.) in which it was possible on the ground of ascertained parental infection, though the children themselves showed no specific physical stigmata.* Including the latter, the aggregate percentage would amount to 5·5, but Dr. Tredgold adds that in all these cases other ætiological factors existed, antecedent insanity in five of the cases, and in the remainder either phthisis, or alcohol, or both. It is probable that where other contributory factors exist, and notably a neuropathic heredity, the syphilitic taint exerts a pernicious effect on the mental integrity of the offspring, for, as Dr. Tredgold suggests, "the syphilitic poison has a special predilection for finding out the weak spot." It would seem, however, that its toxic action is not so effective in producing primary formative arrest of brain development, *i.e.* congenital defect, as in causing subsequent degenerative changes in brain and nerve tissues. Dr. G. A. Sutherland has, indeed, suggested that it is a frequent factor in the production of the "Mongolian" variety of congenital idiocy, but my own somewhat extensive experience of cases of this type does not lead me to concur in this view.

Degenerative changes due to this cause may, indeed, manifest themselves early in life and give rise to cranial osteitis, meningeal inflammations and eclampsia, epileptic and paralytic symptoms so often associated with mental defect in children, and frequently assigned as its cause, though more correctly to be regarded as links in the chain of causation. But the most characteristic type of mental degeneration in the young associated with hereditary syphilis is that designated by Dr. Clouston in 1877 "juvenile general paralysis" (or by Dr. Judson Bury as "juvenile dementia"), in which a break-down (mental and physical) occurs at the period of second dentition or advent of puberty, leading to a fatal issue in a few years. Such cases are found not to be so rare in asylums as was formerly thought, and Dr. Mott has tabulated the histories of twenty-two in vol. i of the 'Archives of Neurology.'

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* 'Archives of Neurology,' vol. ii.

It would appear from this table, as well as from a paper in the 'Practitioner,' January, 1908, in which an aggregate of forty cases are dealt with by the same author, that in at least 80 per cent. of these cases there was evidence either of syphilitic family history or of the presence of syphilitic stigmata (in several instances of both), and he states his opinion that "though there may be many exciting causes the predisposing cause of this disease (juvenile general paralysis) is nearly always hereditary syphilis," thus agreeing with the conclusions of Thiry, Alzheimer, Mendel and other continental pathologists, that inherited syphilis plays a predominant *rôle* in its ætiology. Dr. G. A. Watson, in an investigation of twelve cases published in 'Archives of Neurology,' vol. ii (p. 624), states that "in no single case could the effect of syphilis be excluded." This latter statement is borne out in the records of various cases that have from time to time been brought under the notice of this Society. Thus in vol. iv of the 'Reports,' p. 31, we find the case of a girl, aged 11 years, exhibited by Dr. George Carpenter, in which there were typical Hutchinson's teeth and a patch of left choroiditis, with a suggestive family history and the personal characteristics of general paralysis of the insane. In vol. v, p. 52, a case of juvenile general paralysis (a boy aged 11½ years) is recorded by Dr. James Taylor, who remarks that though the patient shows none of the undoubted stigmata of congenital syphilis, and has a family history free from suggestiveness, "yet the meagre physical development, the suggestive facies, and the Argyll Robertson pupils, if not conclusive, are sufficient to raise suspicions."

To discover the existence of syphilitic taint a careful scrutiny, not only of parental history, but also of brothers and sisters, may be necessary; for, as Dr. Mott observes in his recent article, "it is remarkable how often one found absolutely no signs of syphilis on the body of a juvenile paralytic patient suffering from general paralysis, whereas brothers and sisters showed well-marked signs."

Taking all the evidence into consideration, I am inclined to think that inherited syphilis is a more frequent factor in the production of mental defect and abnormality in childhood that can be demonstrated from the institution statistics I have referred to, and to agree with Fournier that many cases of impaired mental development, such as are met with in children relegated to special schools, have their origin in an inherited syphilitic taint, normal brain development having been interfered with by osteitis causing cranial thickening, by meningeal indurations or by localised cerebral sclerosis. But there is great need for more exact observations in these directions, and I trust that these and other pathological questions may be elucidated by those undertaking the medical inspection of schools.

GUMMATOUS AND PHAGEDÆNIC ULCERATION OF THE SKIN AND MUCOUS MEMBRANES IN INHERITED SYPHILIS.

(From the Skin Department, London Hospital.)

By H. Emlyn Jones, M.R.C.S.Eng., L.R.C.P.Lond.,
Late Clinical Assistant to the Skin and Light Departments, London Hospital.

Of the many and varied signs and symptoms of congenital syphilis probably the gummatous and phagedænic ulcerations of the skin are the rarest. During the last seven years in the London Hospital only three definite cases have been admitted into the skin wards, and the notes of two of these, both of whom have been in the hospital and attending the Out-Patient Department during the last few months, are interesting enough to record below.

Case 1.—E. C—, female, aged 7 years, admitted on September 11th, 1907, with ulceration of the nostrils. The illness commenced as a running of the nose some three months previously following an attack of measles.

Family history and previous health.—Paternal grandfather died of pulmonary phthisis. Mother had two stillborn children. This patient and another sister, aged 17 years, had snuffles at birth. The sister had a typical congenital syphilitic face, notched upper incisors, arched palate, sunken nose, and a gloomy, half-asleep expression.

Condition on admission.—The left nostril was nearly occluded. On the right side there was a thick ulcerated crust on the outside and edge of the ala and rather a fulness at the bridge of the nose, and ulceration on the left ala, and on the skin between the nose and mucous membrane of the upper lip. Ulceration was very extensive and exceedingly rapid, and the left ala was almost entirely eaten away in the week the child was obtaining admission, though still under treatment at home.

The patient had adenoids and enlarged tonsils. She always had weak eyes, and there were opacities in each cornea. The palate was not particularly arched, but the bridge of the nose was sunken.

Whilst in the hospital the child cut one permanent upper incisor, which was a typical Hutchinson's tooth.

Progress and treatment.—Patient was treated in Out-Patients' inefficiently. In hospital mercury and iodides were given internally, and Unguentum hydrargyri (ʒ ss) was rubbed in daily. The nostrils were syringed twice daily with hydrogen peroxide and Unguentum zinci peroxidi (gr. xl ad ℥j) was applied locally. The whole condition had completely healed in three weeks, though considerable deformity of the nose remained.

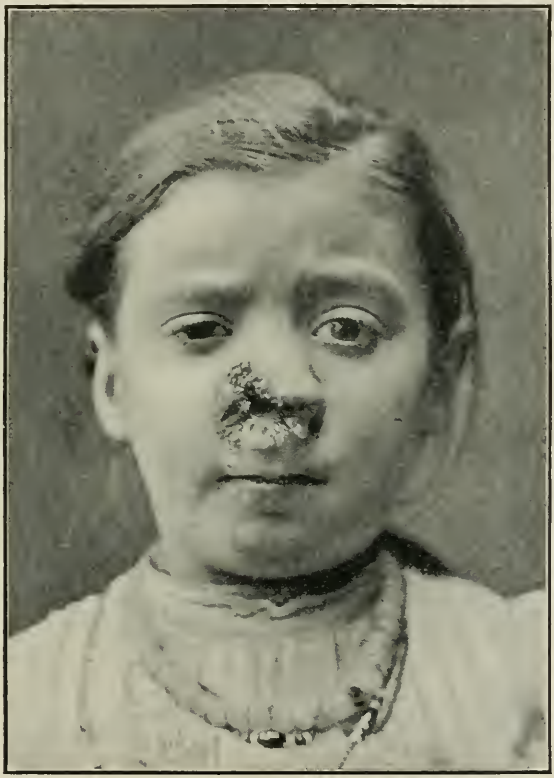

Fig. 1.—Case 1. E. C— on admission, showing extensive ulceration of nostril, alæ and septum.

Case 2.—E. R—, female, aged 21 years, admitted on October 15th, 1907, with ulceration on nostrils, gummatous infiltration in the region of the root of the nose, and marked scarring with some ulceration of the thigh.

Family history and previous health.—Father died of pulmonary phthisis. Brother's child also died of same disease. Mother alive and well. Mother had eleven children, but only three are alive: First child died aged 7 months, ? convulsions; second child alive and well; third child miscarriage; fourth child died, aged 2½ years, ? measles; fifth child died, aged 1 year, after an operation; sixth and seventh children twins, born dead prematurely; eighth died, aged 1 year, of convulsions; ninth child was the patient.

Condition on admission.—Corneal nebulæ, but no signs of true interstitial keratitis. Palate arched. Teeth normal. Tongue had a very irregular edge. There was a large area of ulceration on the tip of the nose and both alæ with increased fulness and width at the bridge. The ulceration in places was phagedænic in character. There were scars of old ulcerations on the face, but these had slowly disappeared in Out-Patients' under iodides and mercury. On the right leg there was a large area of scarring with serpiginous margins of a brownish colour. The centre of the scars was more white in colour, and appeared somewhat atrophic. Ulcerations were present on some of these scars. These ulcerations chiefly occurred at the age of two to three years. Since the age of two patient has been having a good deal of eye and skin trouble of this kind, and when one was bad the other was much better, and *vice-versâ.*

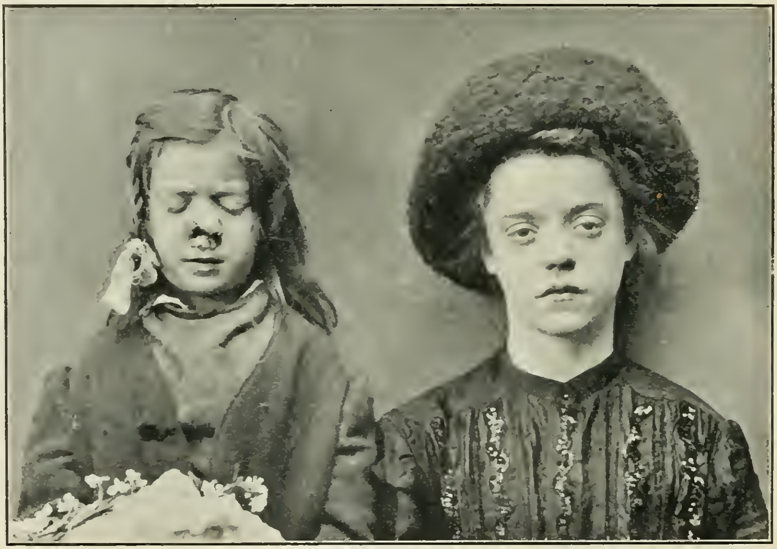

FIG. 2.—Showing E. C— and sister, both typically congenital syphilitic children. Eye trouble, Hutchinson's teeth, etc. On admission.

Treatment and progress.—Patient was treated with iodides and mercury by the mouth, and ʒj of the Unguentum hydrargyri was rubbed in daily. The drug was pushed to salivation. Locally boracic fomentations were applied at first, and afterwards the red oxide of mercury ointment. At the end of five weeks the ulceration of the nose had wonderfully improved, and the fulness at the bridge was greatly decreased. Patient was then discharged to the Out-Patient Department, and is still under treatment and making marked progress.

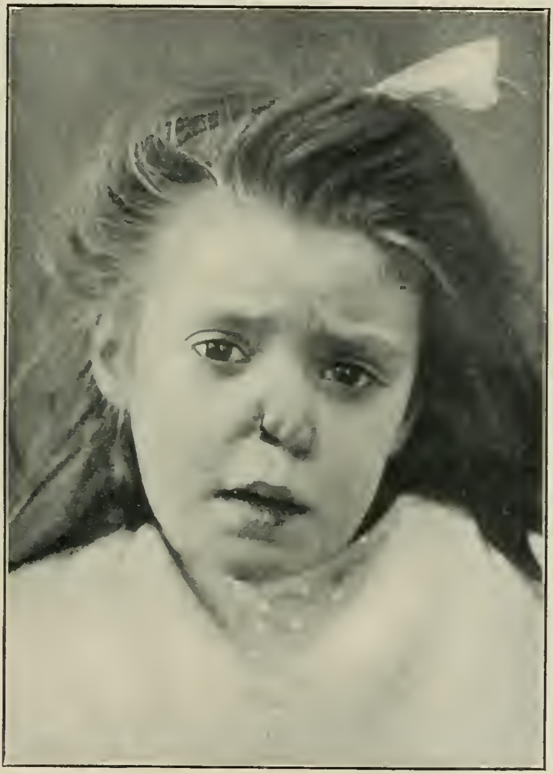

Fig. 3.—Case 1. E. C— after three weeks' treatment.

The special feature in connection with these two cases is the great rapidity with which the ulceration took place in Case 1, showing the importance of early diagnosis and prompt treatment so as to lessen the resulting deformity as much as possible, and the comparative slowness of the ulceration in Case 2, though in this latter the history of lesions on various parts of the body from the age of two upwards, and the extraordinary serpiginous scarring on the leg make the diagnosis a certainty. The lesions in the two at the various periods of life are fairly typical of those described as occurring at those ages; the earlier the child is attacked by the gummatous ulcerations, the more often is the trunk and body the seat of the affection, the nose being more often attacked in the older subjects. In both there was corneal trouble, though no definite keratitis, and in both the intensity of this inflammation seemed to vary inversely with the intensity of the cutaneous lesions. Hall, Marshall, Cooper, Crocker, and many other writers all state the rarity of these affections, more especially of the phagedænic variety. Up to the third year of life this form may be of two distinct varieties, either a kind of furuncular syphilide, with lesions, which on healing leave irregular scars of serpiginous outlines, white in the centre, with some brownish pigmentation at the margins, or a subcutaneous nodule-like mass which involves the skin secondarily, and

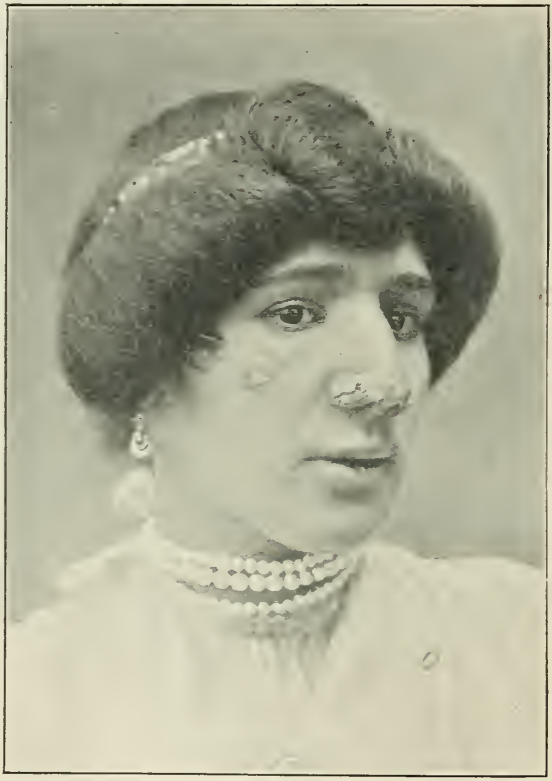

FIG. 4.—Case 2. E. R— on admission.

usually goes on to ulceration and oft-times to necrotic changes. An excellent example of the serpiginous outline of the scar is seen in Case 2, and an exactly similar picture is given by Fournier (1). In older children these subcutaneous gummata with involvement of the skin are still present, and according to George Carpenter are more common on the face, neck, and in the neighbourhood of joints, whereas in infants the same writer observes that the buttock is the common situation, especially in the region of the anus. George Carpenter (2) cites two cases of gummata in the lung associated with these cutaneous gummata, one in a child, aged 9 months, and the other in a child, aged 1 year.

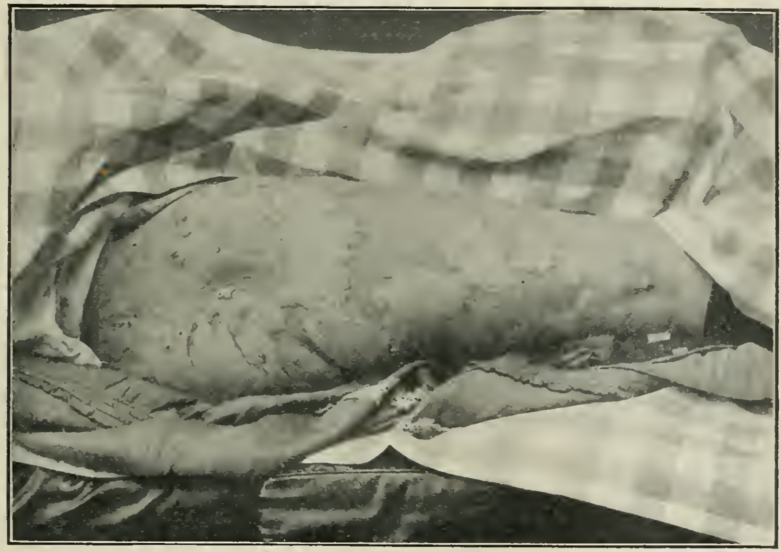

Fig. 5.—Case 2. E. R —, showing scarring on thigh from ulceration when aged 2 years.

Taylor describes also a form of ulcerative onychia, beginning at the side or base of the nail as a papule or pustule, which soon ulcerates, the process extending along the concave base of the nail or along the lateral margins, finally involving the matrix of the nail, which is soon cast off. The thickened everted edges of the ulcer, its sloughy case and sanious discharge, together with the coppery hue of the surrounding skin, are its characteristic features. This lesion, he says, is most frequent in the first year or two of the child's life. In 1906 a female child, aged 6 months, attended the Out-Patient Department suffering from this exact lesion, though from the number of cases of congenital syphilis in babies one must infer it to be a lesion of considerable rarity.

The most important variety of this form of the disease in older children, both as regards early diagnosis and prompt treatment, is undoubtedly the ulceration affecting the face and nose. The depression of the bridge of the nose in infantile syphilis is due to a periostitis with arrest of development of the nasal bones, the arrest occurring during the period of infantile "snuffles," but later ulceration of the alæ and septum, and even perforation of the palate, may occur. If prompt and energetic treatment is not adopted the nose may almost entirely disappear, and terrible deformity may result. In both the cases reported the nose was the chief point attacked. The cases are sometimes diagnosed as lupus vulgaris, and it is possible that some few of the cases which fail to react to the X-ray treatment or Finsen light may be of this character.

The chief points of diagnosis are :

Lupus vulgaris.	Gummatous ulceration in congenital syphilis.
Disease generally has lasted months or years.	Essentially a rapid process, days or weeks at most, causing great ulceration or destruction.
Borders of ulceration thin, flat, and generally soft.	Generally sharply cut, irregular and serpiginous in character. Often punched out.
Shallow base, unhealthy granulations. Sometimes presence of apple-jelly nodules, though these are frequently difficult to observe.	Deep and irregular base, sometimes a yellow slough.
Contractile bluish-red scar.	Regular flat scar, at first brown, becoming white from centre to periphery.
Rarely attacks bones, and oft-times symmetrical.	Rapidly extends to bones and generally asymmetrical.
Other evidences of tubercle.	Other evidences of the disease.

From these points it seems that diagnosis is easy, but usually this is far from true, and in these cases, as in any doubtful cases of a similar nature in the acquired disease, the patient should be given the benefit of the doubt, and treatment adopted for the possible syphilitic taint. Unfortuately, in those cases in which the nose is attacked, as Mr. Hutchinson has pointed out, the other evidences of the disease are often missing, the teeth are not often notched, and the interstital keratitis is not well marked. In Case 1 the patient developed a typical Hutchinson's tooth whilst under treatment, and in Case 2, though nebulæ remained on the corneæ, there was no evidence of interstitial keratitis.

Lupus vulgaris existing in the subjects of inherited syphilis is a well-recognised condition, and some authorities consider these cases are possible ones of lupus, in which the lupus is excited to unusual activity by the presence of the syphilitic virus. A. H. Ward (4) points out that in experiments of injecting tuberculin in cases of tertiary syphilis much activity was excited round the specific lesion, and then conversely suggests that the presence of syphilis would probably excite abnormal activity in a tubercular lesion. This may be so, but nevertheless the existence of some true phagedænic cases without the presence of the tubercle bacillus must be admitted. The lesions of the skin secondarily involved from an underlying periostitis are more common, and usually there is no doubt as to their nature, and Mr. Hutchinson (5) cites one instance of ulceration of the skin in a subject of inherited syphilis resulting from the ulceration of glandular gumma in the neck. Cases similar to those reported are extremely rare in literature, but the same author had several in his wide experience, one (6) a true phagedænic ulceration of the parts round the right orbit, and another (7) of extensive destruction of the palate and nose in a young man, aged 19 years. Regarding gummatous ulcerations of the mucous membranes in hereditary syphilis, Taylor (8) states they most usually developed on the hard palate or upon the post-pharyngeal wall, and if in the latter situation may be mistaken for retro-pharyngeal abscesses. They are rarely seen before the third year of life, and generally occur from the sixth to the twelfth. They commence as a cellular infiltration of the mucous membrane, which forms a small tumour. Necrotic changes invariably occur, leaving an ulcer with sharply-cut edges, and often involving the mucous membrane down to the subjacent bone. George Carpenter (9) records several examples. In a girl, aged 4 years, there was extreme ulceration and loss of substance of the soft palate. In a girl, aged 11 years, the uvula had disappeared, the soft palate was partially destroyed, and an ulcer of irregular shape, covered with a greyish slough, was present on the pharyngeal wall on the left side. In another girl, aged 10 years, there was a central perforation of the hard palate and extensive necrosis of the frontal and nasal bones. And in a girl, aged 9 years, there was an ulcer on the lateral wall of the pharynx, extending upwards above the level of the soft palate. He also records the case of a boy, aged 7 years, with a gumma of the tongue, which rapidly resolved under mercurial treatment.

Treatment must be both local and general. Mercury must be given, and to get its most rapid effect inunction seems the best method of administering the drug. Small doses, combined with iodides, given internally often hasten healing.

The drug must often be pushed to salivation, for the most rapid effect possible is desired to prevent the deformity. Locally acid nitrate of mercury has been recommended, or other strong mercurials of a caustic nature, but frequently boracic fomentations or any antiseptic ointments are sufficient. Where the nose is attacked and the wound is continually irritated by a nasal discharge, great benefit has been found by the use of an ointment made up of peroxide of zinc (gr. xx–xl ad ℥i of soft paraffin). This is a very unstable compound, and so keeps the parts in a continual bath of oxygen. It has been found useful in all kinds of ulcerations, sometimes almost acting as a charm, but particularly as a local application in the various forms of syphilitic ulceration, especially of a phagedænic variety, or where there is a mixed infection, both in the acquired and congenital disease.

N.B.—For permission to publish these two cases I am greatly indebted to Dr. J. H. Sequeira, physician to the Skin and Light Department, London Hospital.

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SOME EXPERIENCES AND OBSERVATIONS ON CONGENITAL SYPHILIS IN INFANTS.*

By GEORGE CARPENTER, M.D. (Lond.),

Chairman of Council of The Society for the Study of Disease in Children; Membre Correspondant de la Société de Pédiatrie de Paris; Physician to The Queen's Hospital for Children.

(*Concluded from page* 108.)

THE small yellow gummata which are occasionally found post mortem in infants' lungs have much the same microscopical appearances as gummata in other organs. In their central parts they are apt to be definitely fibrous, and at their periphery they are chiefly composed of small round cells which invade the alveolar septa. In their growth the alveoli are destroyed, and all stages of their obliteration can be seen in the microscopic fields, where they occur as irregular spaces bounded by cells. The bronchial tubes are either stuffed with catarrhal products or have shed their linings, and their walls are infiltrated with small lymphocytes.

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* Read at a special meeting of The Society for the Study of Disease in Children, for the discussion of "Inherited Syphilis," November the 13th, 1907.

I have also met with several examples of extensive consolidation of the lungs from the apices downwards in syphilitic infants which has persisted for long periods. The youngest was six months old, and consolidation was known to be present from March the 31st to November the 24th, when she ceased attendance. She died from being scalded the following January. Whether they were examples of delayed resolution in pneumonia or of syphilitic pneumonia it is, I think, impossible to say. Syphilis has to be thought of in such cases. But the further removed the case is from the syphilitic age the greater are the chances of the consolidation being tuberculous. Even in the post-mortem room sometimes consolidation may look simple when it is in reality tuberculous. A syphilitic infant a year old, with consolidation of the upper half of one lung, suffered from some fever and loss of flesh. Anti-syphilitic treatment had no effect, and he died some few weeks later. The upper half of the lung was consolidated and of a red colour. Its bronchial tubes were thickened, dilated, and contained muco-pus. Radiating from the bronchial tubes were scars of different sizes passing in various directions and intersecting the solid areas in varying degrees. The alveoli were stuffed with fibrin, with fibrin and catarrhal cells, and with catarrhal cells only. The alveolar walls showed considerable endothelial proliferation. The thickened endothelium was characterised by increased vascularity and by a fibrillar or reticulate stroma. Many alveoli were collapsed. In the consolidated areas were quite a number of giant cells apparently formed from the endothelium. In one small area there were signs of commencing caseation. The septa were thickened. The bronchi showed infiltration of their walls with round cells and some had shed their epithelium. On the other hand some cases of cirrhosis of the lung in young children may well be syphilitic, and modern methods of examination may prove them to be so. The spirochæte has been detected in the sputum of those suffering from syphilitic pneumonia, and the discovery of this organism will enable us in the future to more readily recognise this condition of the lung.

The child Isabel H—, aged 5 years, who died of exploratory puncture of the chest, and an account of which I published in 'The

American Journal of the Medical Sciences,'* had an indurated, shrunken, and scarred lung, with dilated and thickened bronchial tubes, and which, microscopically, could not be differentiated from syphilitic pneumonia. It was not tuberculous, but there was no history of syphilis.

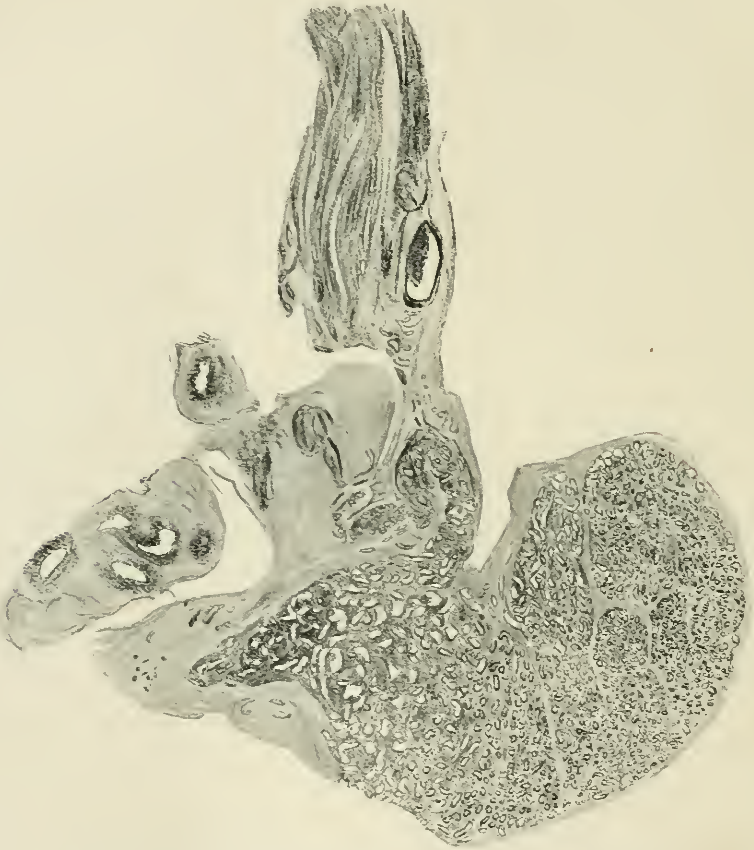

Fig. 14.—Syphilitic testicle removed from an infant, aged 6 weeks. × 10, and showing cirrhosis of the body and the epididymis. For an account of the case see footnote to Fig. 18.

Syphilis of the Testicles.

Henoch, Désprès, R. W. Taylor, Obédenare, North, Bryant, Parrot, Lewin, Hutinel, Fournier, and Seringe have recorded cases and done original work on the testicles of congenital syphilitics.

In September, 1892, I published some observations on hereditary syphilis of the testicles in the 'Practitioner,' and I arrived at the following conclusions:

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* October, 1893, vol. cvi, No. 4, pp. 422–423.

Syphilitic inflammation may take the form of the gummatous or the cirrhotic (Figs. 14 and 15). I have seen both varieties. All parts of the organ may be attacked, and even the cord and the vas may feel thickened. Hydrocele is not an uncommon association.

The infantile testicle in health varies in size between a lemon-pip and a hazel-nut, and the normal tension of the globe is, in the language of ophthalmology, about + 2. The left testicle is usually the larger of the two. When the organ is enlarged the recognition that there is something amiss is not difficult, but when there is no enlargement, and enlargement is not a necessary accompaniment of disease, and when reliance has to be placed entirely on testicular tension, then the chance of arriving at a wrong conclusion is by no means small, because it is very difficult to secure and test for

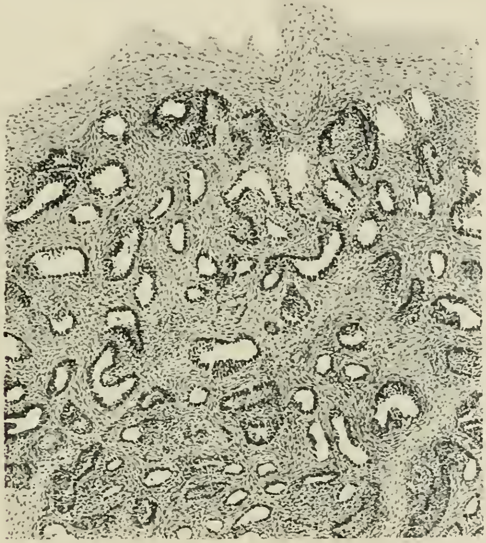

Fig. 15.—Microscopic section × 50 of the testicle of a syphilitic infant, aged 6 weeks, showing cirrhosis of the organ. In the normal testicle the seminal tubules would be close together, and the amount of areolar tissue but trifling. The tunica albuginea is thickened. The infant had "snuffles" and multiple syphilitic epiphysitis of a week's duration. The hands and feet were freely desquamating. He had a confluent eruption on the buttocks and the calves, surrounded by outlying flat-topped papules the circumference of a split-pea, a confluent syphilide round the mouth reaching to the neck, and shallow ulcers on the lips. The axillæ displayed a scaly eruption. There were hydroceles on both sides, the epididymes felt enlarged, and were certainly hard. The cords also seemed enlarged. The hydroceles cleared under mercurial treatment, and the testicles then felt hard, but were not enlarged. He died after a month's treatment.

fluctuation so small and so elusive a body as the infantile testicle. But if there be cirrhosis of the organ, and if there be no associated hydrocele to hamper the examination, in place of the normal tension of the globe there may be felt a hardness which can be compared with that of scirrhus.

On the other hand, the organ may enlarge to the size of a filbert, a chestnut, a French plum, or even an egg,[*] and in that case the choice would lie between syphilis, tubercle, and a new growth, all being possible.

So far neither the seminal vesicles nor the prostate have been found enlarged in syphilis, the only present clinical distinction between the tuberculous and the syphilitic testicle. Calmette's tuberculin ophthalmic reaction should here prove useful, seeing that a tuberculous testicle has been found in a typically syphilitic infant (Stoeber). But a diseased testicle in the syphilitic age of life is more likely to be syphilitic than tuberculous.

Certain cases of infantilism must be ascribed to double syphilitic orchitis. It also accounts for mal-development of the organ. In regard to this latter it will be remembered by some of the members of this Society that Mr. Anglin Whitelocke showed an ovary-looking organ [†] which he had removed from the inguinal hernial sac of a female child, and which was thought by the members present to be a badly developed testicle. A microscopic drawing of this was shown, and the similarity between it and that of a syphilitic cirrhotic testicle (*vide* Fig. 14) was most striking.

Syphilis of the Ovaries and Internal Genitalia.

I have no records of sclerosis of the ovaries, but the treponema pallidum has been demonstrated there, and these organs have been found diseased in the syphilitic fœtus. Cases of syphilitic infantilism occur also in females, and some examples of this condition I have no doubt are to be explained by syphilitic atrophy of these organs.

But I have seen one case of ovarian disease which was possibly syphilitic in origin and gummatous in nature. In 1903 I showed to the Society,[‡] at the discussion on tuberculous peritonitis, as an illustration of the value of bimanual examination in abdominal disease, a drawing of an ovarian tumour with a dilated Fallopian tube which had been diagnosed by me by rectal bimanual examination during life. The infant, who had not been healthy from birth, was twenty-two months old. In the right inguinal region a tumour was found which did not feel fixed even through the abdominal wall. By rectal examination the uterus was normal. Attached to its upper part by a short, cord-like attachment was the tumour, and on the posterior surface of this tumour was a convoluted tube. The tumour was freely movable and could be carried over to the mid-line of the body, though not beyond it. Fluctuation was detected. The ovary could not be felt. On the opposite side it was healthy. The child had Parrot's nodes, the free edge of the spleen projected four fingers' breadth in the front of the costal margin, and the liver three fingers' below it. The tumour was about the size of a double walnut ($1\frac{3}{4}$ in. by $1\frac{5}{8}$ in.) and contained foul-smelling pus; it was slightly adherent to the rectum, the cæcum, and the bladder. The conclusion arrived at was that it was an ovarian cyst burrowing down between the layers of the broad ligament. The Fallopian tube, which was enlarged and curly, could be felt behind and above it. It was not tuberculous.

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[*] 'Syphilis in Children,' pp. 59–63.

[†] "Notes on a Case of Double Inguinal Hernia in a Female Child, each Sac containing an Ovary-like Organ," 'Reports of The Society for the Study of Disease in Children,' vol. ii, pp. 191–195.

[‡] "Tuberculous Peritonitis, Symptoms and Diagnosis," 'Reports of The Society for the Study of Disease in Children,' vol. iii, pp. 90–91.

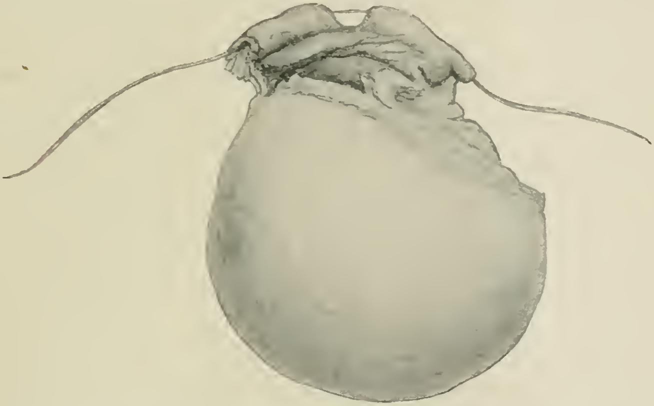

Fig. 16.—Drawing of the ovarian tumour and dilated Fallopian tube from a child aged 22 months, as it appeared after removal.

Syphilis of the Nervous System in Infants.

Of disease of the nervous system in infants I have not met with many examples. Syphilitic meningitis, spots of yellow softening of the brain, endarteritis, and gummata on the cranial nerves, perhaps associated with choroiditis, may be met with occasionally, but, judging from the paucity of the literature, they are of very rare occurrence. Cases illustrating these conditions in infants have been published by Barlow, Chiari, and Henoch,* Sutherland and Thompson Walker,† and others.

I have seen several cases of hydrocephalus in syphilitic infants; one recovered under mercurial treatment, the others I lost sight of. Fruhinsholz ‡ gives an account of the post-mortem examinations of two cases of syphilitic hydrocephalus.

In a syphilitic infant, aged 4 months, with the clinical signs of hydrocephalus; the effusion of fluid was found between a thin, yellowish-white, friable arachnoid and the underlying pia mater. The pia mater displayed diminutive, yellowish, sharply-defined tracks of thickening and hardening, which microscopically displayed round-celled infiltration, especially abundant at its outer part and in the neighbourhood of the vessels.

In another infant, aged 6 months, with the symptoms during life of basic meningitis, in whom after death there was found internal hydrocephalus, the following were detected: Diminutive, scattered, localised, whitish infiltrations of the meninges. Also partial sclerosis of the choroid plexuses, the vascular walls showing fibrous changes, together with occlusion of their channels, with similar formation or with embryonic cells. The ventricular surfaces of the optic thalamus and corpus striatum were covered with thickened membrane. In the meshes of this fibro-nuclear tissue were numerous collections of round cells together with a plentiful vascular supply. Surrounding the blood-vessels in the superficial part of the membrane were several layers of round cells.

Fruhinsholz also describes in syphilitic infants localised cloudiness and thickening of the meninges and gummata the size of miliary tubercles on the cerebral vessels. These were accidentally discovered and would have been easily passed on a cursory examination.

He also found in the frontal lobe of the brain of an infant, aged 15 days, a depressed area with thickened, adherent, yellowish-white meninges covering cerebral softening of the appearance of yellow pap and of the size of an olive.

I have had under my care a syphilitic girl of five and a half months with extensive encephalitis, for a full record of which *vide* Appendix, Case 3.

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* 'Syphilis in Children,' pp. 77–80.

† *Loc. cit.*, pp. 134–146.

‡ *Loc. cit.*, pp. 44–48.

APPENDIX.

1. A CASE OF COARCTATION OF THE AORTA.

Percy S. W—, aged 5 years, was brought by his mother to the Evelina Hospital on June the 10th, 1895. The labour was a difficult one, and he was born with "snuffles." Six weeks before his birth his mother was laid up with "influenza and pleurisy." There had been five children of the marriage, one of whom had died from "inflammation of the brain" at three years. All the children suffered from "snuffles" at birth, and "some of them had rashes." There had not been any miscarriages or still-born children. There was a history of rheumatic fever in both parents, and phthisis on his mother's side. He was a badly-nourished, ill-developed child, with a pallid face, oral cyanosis, and loud and laboured breathing. On stripping him for examination what immediately attracted my attention was the enlargement and tortuosity of the arteries about the scapular and abdominal regions. In the armpits the subscapular and long thoracic arteries were thick, tortuous, and pulsating. The pulsation could be distinctly seen, and the arteries felt very hard. A thick pulsating vessel could be felt crossing the subclavian triangle on both sides. This appeared to be the transverse cervical artery. The superficial cervical artery was enlarged on the left side. In the eighth and ninth interspaces behind on the left side enlarged tortuous and pulsating vessels could be seen and felt running from within outwards, and other vessels were noticed crossing the posterior border of the scapula. Similar vessels were seen on the right side, but they were not so well marked or so much enlarged. The axillary arteries felt enlarged on both sides, and hard, and they were decidedly tortuous. The brachial arteries felt like whipcord; pulsation was well marked in them and they were slightly tortuous. The radial arteries did not appear to be thickened. A feeble pulse at the wrist was detected in both the radial and ulnar arteries. The superior epigastric and superficial epigastric arteries could be seen pulsating and felt beneath the skin. The former was decidedly enlarged and tortuous, more so on the left side. The femoral arteries were small, felt like rigid cords, and very feeble pulsation could be detected in them. Feeble pulsation was felt in the anterior and posterior tibial arteries. The abdominal aorta could be felt feebly pulsating through the abdominal wall. *Per rectum* two cord-like structures were distinguished along the brim of the pelvis, one on either side; no pulsation could be felt in these. The deep epigastric arteries could be grasped bimanually and were found to be enlarged and tortuous. A number of other large vessels could also be felt in the abdominal wall. A collection of enlarged and tortuous vessels was detected in the pelvis, especially in the neighbourhood of the sacro-sciatic notch, feeling like a collection of worms on either side.

Running down the front of the sacrum a large and thick vessel was found, and coursing along the posterior wall of the rectum was another enlarged and tortuous vessel.

One of the superficial arteries of the abdomen was removed for microscopical examination. During its removal the vessel did not pulsate like an artery, the flow of blood being venous both in colour and appearance. When a microscopical examination of the vessel was made no fault could be found with it—it had all the appearances of a perfectly healthy artery. The thickening of the vessels was, therefore, due to well nigh empty and contracted arteries.

Heart.—The cardiac impulse was somewhat diffused, but best seen and felt in the fifth interspace in the nipple line and of a heaving character. Slight epigastric impulse was also detected. The area of dulness did not extend to the right and commenced at the third left costal cartilage. The sounds were natural at the apex, but basic systolic bruits were audible on both sides. The murmur was heard rather better on the right side than on the left, and conducted better to the right clavicle than to the left. The bruit was also heard over the right chest behind and on the right axilla and detected over the spine of the left scapula. It was not at all striking.

Lungs normal.

Liver.—The free edge could be felt three fingers' breadth below the costal margin in the nipple line.

Spleen.—This projected two fingers' breadth in front of the costal margin.

Abdomen natural.

Urine normal.

Osseous system.—The skull appeared to be thickened. Bossing was felt on the parietal bones near the coronal suture. The occipital bones appeared thickened, and there was some doubtful thickening of the temporal bones.

Skin.—At the left angle of the mouth there were some linear scars. In the right buttock near the anus were two very small circular scars. A small scar was found just below the left patella. The fingers and toes showed a slight tendency to clubbing.

Naso-pharynx.—The boy had adenoids and naso-pharyngeal catarrh and cervical adenitis on both sides of some extent.

Fundus oculi.—Nothing abnormal was detected. While under observation he steadily emaciated and suffered from fever. Occasional puffiness of the face and blueness of the lips were seen; the breathing became loud and laboured at times with occasional coughing. At times he was drowsy by day and restless by night. I made a further examination of the fundus oculi on June the 19th and found tubercles of the choroid of common type and early optic papillitis. The parents, understanding his case to be hopeless, removed him, and the diagnosis could not be verified. But I believe the boy was suffering from a congenitally stenosed or occluded aorta at the point of junction of the ductus arteriosus and of syphilitic origin.

2. A CASE OF CONGENITAL SYPHILITIC ULCERATION OF THE LARYNX AND INTERSTITIAL PNEUMONIA.

Mary E. S—, aged 13 months, was brought to the out-patient department at the Evelina Hospital on October the 29th, 1894, by her mother, who stated that she had "bronchitis."

The mother had been delivered of ten children, but five of these were still-born; she had never had any miscarriages. All of the children had thrush, "which passed through them, but did not extend below the buttocks." None of her children suffered from "snuffles," but the subject of these notes had considerable muco-purulent discharge from the nose, and the mother owned that the child had been troubled with this since she was three months of age, at which time "a rash first broke out round her mouth and then passed to her bottom, but did not extend as low as her knees." She was taken to Guy's Hospital at this time, and was given grey powders.

On examination.—The head was small, measuring $15\frac{1}{2}$ in. in circumference, and the anterior fontanelle was widely open. Her mother said she was "very knowing, always laughing and talking in her little way at home." Whilst I was examining her she had an attack of laryngeal spasm. The crowing was not loud and noisy, as with healthy vocal cords, but was dysphonic. Her mother then volunteered the statement that "ever since she had first been taken bad she had crowing on and off." The mouth was extensively scarred at the angles, and the sides of the cheeks and the chin were invaded.

The right upper lobe of the lung was dull to percussion, but little information was obtained from auscultation of the lungs, as a whistling sound of laryngeal origin was audible all over the chest.

There was an eruption on the buttocks and vulva, consisting of papules, varying in size from a pin's head to a small split-pea. These had an excoriated look, and were red in colour. On the backs of the upper part of the thighs were stains, varying from a pin's head to a pin puncture, and of a dusky hue.

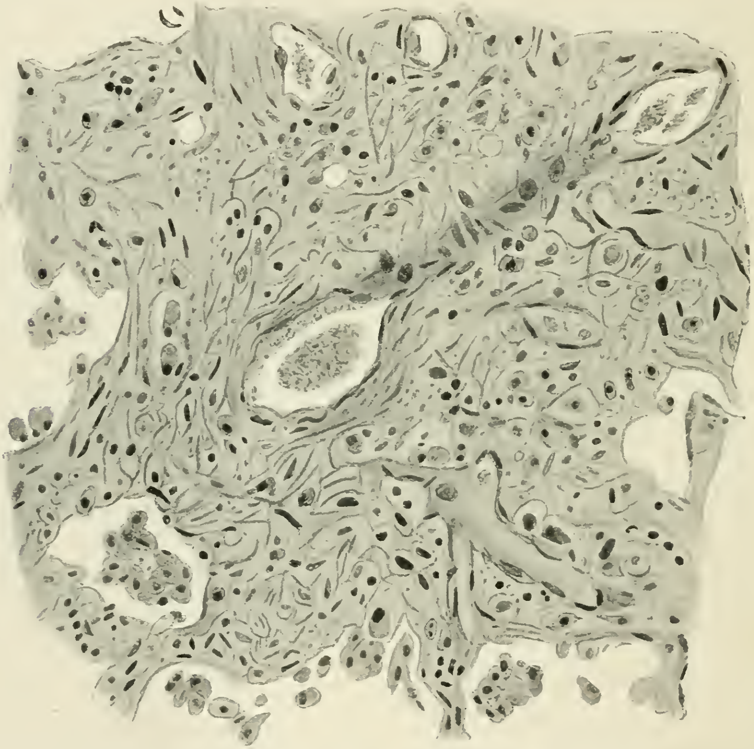

FIG. 17.—Syphilitic lung showing dilated capillaries, fibro-nuclear thickening of alveolar walls, and destruction of alveoli. Catarrhal cells in alveolar remnants. Leitz oc. 3 obj. 7.

She was treated for syphilis. A few days after her first appearance at the hospital she died somewhat suddenly.

Autopsy.—Larynx : The epiglottis and ary-epiglottic folds were much swollen.

There was extensive ulceration of both vocal cords, the larger being on the left side, the edges of the ulcers being ragged and their bases rather deep. Both ventricular bands were also ulcerated, the ulceration extending to the ary-epiglottic folds; this was much more marked on the right side than on the left. The under surface of the epiglottis had a mossy appearance, and when the organ was opened out for the purpose of sketching, deep fissures came in view.

Lungs: Somewhat recent adhesions were found on the right side. The whole of the upper lobe on the right side had a greyish, slightly granular appearance, and was quite solid. Neither air nor fluid could be squeezed from its cut surface, and it could not be readily broken up by the thumb-nail. Some delicate strands of fibrous tissue were seen in it. The other lobes were perfectly healthy.

A microscopical examination of the consolidated lung revealed the following changes:

The alveolar septa show definite alterations in structure, ranging from a condition of dilated capillaries with but few nuclei to a state where the walls are thickened by fibro-nuclear tissue. This tissue occurs either as very delicate fibrillæ with round or oval nuclei, or as a pronounced and fibrous-looking structure with nuclei of all shapes, round, oval, fusiform, and pyriform as in areolar tissue.

In the alveoli are seen granular detritus with ordinary simple nucleated well-stained catarrhal cells, or with these and with cells of twice, or thrice that size with single or double nuclei. Mostly there is no detritus, and in those situations where the thickening of the alveolar walls is pronounced and the catarrhal cells are arranged in clumps they affect a carcinomatous aspect; there are no fibrin plugs to be seen. A prominent microscopic feature is the number of vascular channels which possess but an endothelial lining, are enveloped by a mass of fibro-nucleated tissue, and take on a circular form. These new vascular channels are very numerous.

The bronchi have shed their epithelial contents, and in some catarrhal cells, small lymphocytes, and granular detritus are visible in their interiors, and their walls are plentifully infiltrated with round cells, being prominent microscopic objects under a low power. The infiltration consists of small lymphocytes mostly, and a few plasma-cells. The matrix in which they lie is either structureless or displays faint fibrillation, or is unmistakably retiform. Numerous capillaries course through these little neoplasms, and all stages of tissue formation can be seen in progress in them up to a decided fibrosis with polymorphous nuclei.

In several bronchi are large polypoid outgrowths of fibro-nuclear tissue into the lumen of the tubes.

Around some bronchi and elsewhere in the section are circular clumps of round cells—small gummata. These round cells are mostly small lymphocytes with a few plasma-cells. In places a retiform tissue can be defined, but elsewhere this is not obvious. But what is obvious in some of them is a commencing fibrosis—the fibrillæ are pronounced, there is increased vascularity and polymorphous nucleation.

The vascular channels contain red blood discs, but there is no clotting of the blood and no leucocytosis. Comparing the specimens with healthy lung tissue in infants I cannot persuade myself that the arteries or veins are altered. Thickened external walls they have, the arteries especially, but such is the appearance in normal lungs. When there is thickening of the external vascular coat this appears to be due to encroachment of fibrosis rather than to changes occurring within the vascular walls.

3. A CASE OF SYPHILITIC CORTICAL SCLEROSIS (ENCEPHALITIS) IN AN INFANT AGED 5½ MONTHS.

Ethel S—, aged 5½ months, came under my care at the Evelina Hospital on February the 13th, 1893. Her mother had had one other child, which was born dead, and "her hair came off in large quantities afterwards." The infant was perfectly healthy at birth with the exception of its "eyes, which appeared to be crossed." At one month it was unable to suck, and had "snuffles." Then convulsions began one morning by a sudden movement of the left arm. The mother was struck in the breast. Then the movements spread to the right arm and then to the legs. The head became retracted, and it remained so from that time. At two and a half months she "moved her eyes in a peculiar manner, and she was pronounced to be blind by a doctor." When she came under my notice she was a fairly nourished infant. She had "snuffles," and a macular eruption on the buttocks. The face was flushed, the respirations rapid, 70 to the minute, and grunting. The bridge of her nose was depressed and widened. Her eyes were moved in every direction, but usually were aimed slightly upwards and to the left side. The head was markedly retracted, and all the limbs were stiff. The fingers were flexed into the palms, and the thumbs flexed and adducted. The arms were generally flexed and adducted, but they were extended at times. The toes were flexed and adducted, the legs flexed on the thighs, and the thighs on the abdomen.

Fundi oculorum.—Patches of choroidal atrophy were seen in both fundi.

There was some slight broncho-pneumonia, and the temperature was 99·2° F. There were no physical signs otherwise. She died on the 16th.

Post-mortem, February the 17*th.*—Rigidities of the arms and legs were marked, and there was green discoloration of the abdomen. The lungs showed patchy broncho-pneumonia, and the eye-backs patches of choroidal atrophy. The other organs were normal.

The brain showed areas of atrophy of both hemispheres on their external and internal aspects. On removing the skull cap the place of the atrophied areas was seen to be filled up by cystic formation. The cysts were loculated, and the loculi contained either clear or slightly opaque fluid, their walls as if sanded with lymph and with no trace of blood or crystals. Parts, however, retained the shapes of the convolutions, and these, though small, were hard and dense on section. The sclerosis of the right hemisphere (Fig. 18) on its outer surface involved the following convolutions—the ascending parietal and the parietal lobule; that portion of the ascending frontal (about half its width) in proximity to the fissure of Rolando, starting from the fissure of Sylvius; the superior frontal and a portion of the middle frontal; a portion of the superior temporo-sphenoidal at the commencement of the fissure of Sylvius, and the front half of the middle temporo-sphenoidal gyrus running into the tip of the temporo-sphenoidal lobe. On its inner aspect the sclerosis invaded the following gyri, viz. part of the callosal, part of the marginal, and part of the quadrilateral. It reached from the corpus callosum below to the vertex above, where it joined the other affected areas.

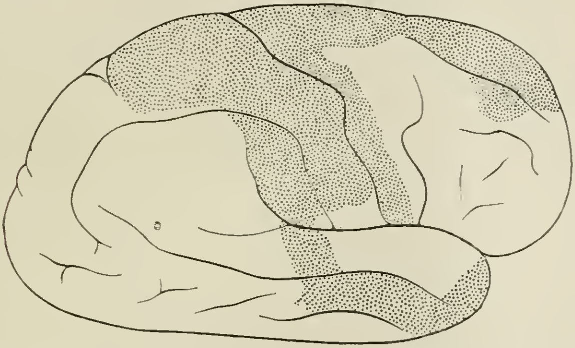

FIG. 18.—Brain of Ethel S—, aged 5½ months. Right hemisphere, showing sclerosed areas. From a sketch made by the author at the autopsy. For description see text.

The affected gyri of the left hemisphere (Fig. 19) on the outer aspect were the ascending frontal, the parietal lobule and the first annectant, a narrow strip of the ascending parietal adjoining the fissure of Rolando from the fissure of Sylvius upwards, the superior and part of the middle frontal, and a small area of the superior temporo-sphenoidal adjoining the fissure of Sylvius and slightly invading the middle temporo-sphenoidal gyrus.

The inner surface of this hemisphere showed sclerosis of part of the callosal and marginal gyri stretching from the corpus callosum and reaching to the affected areas on the vertex.

The right hemisphere was smaller than the left.

Cross sections of the brain showed the sclerosed areas to be sharply defined (*vide* Fig. 20, Nos. 1—5).

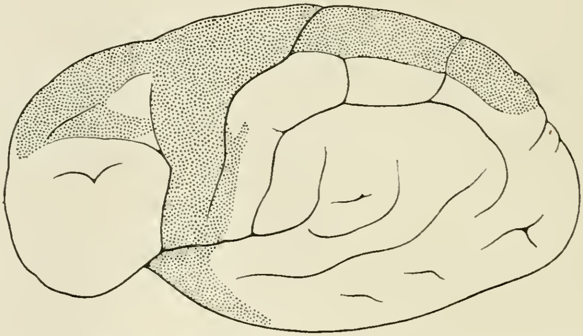

Fig. 19.—Brain of Ethel S—, aged 5½ months. Left hemisphere, showing sclerosed areas. From a sketch made by the author at the autopsy. For description see text.

The large arteries were unaltered. No naked-eye changes were found in the spinal cord. There was slight patchy broncho-pneumonia and the other organs were normal.

Histological Report by Dr. Ernest Jones.

The following report is based on seven sections of the brain of Dr. George Carpenter's case. Three were taken from the cortex and four from the white matter. As the sections were made and stained (by hæmotoxylin and eosin) some fifteen years ago, it was impossible to study the finer changes, particularly those relating to the glia and nerve cells, which are so important in connection with congenital lues. The following facts however were clearly observable.

(a) *Pia mater.*—In general this was not appreciably thickened or adherent, but in places there was a considerable exudation between the pia and cortex. There was a diffuse cellular infiltration present, particularly of small mononuclear cells. This infiltration bore a distinct relation to the vessels. The vessels themselves were not greatly altered. There was no endothelial proliferation, and the most striking change was a small-celled infiltration of the adventitia, where a few plasma-cells were also to be seen.

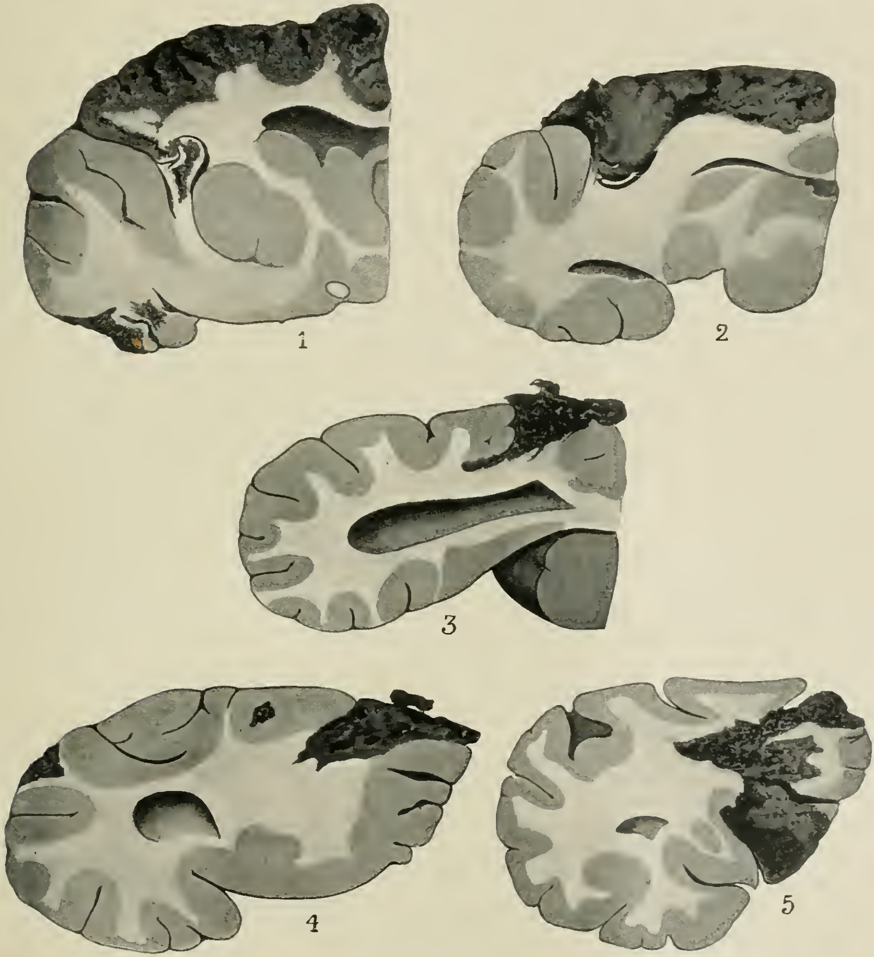

Fig. 20.—Brain of Ethel S—, aged 5½ months. Transverse sections from before backwards, showing the extent of the sclerosed areas. From sketches made at the autopsy by the author. For description see text.

(B) *Cortex.*—So far as the nerve-cells are concerned the only facts that can be stated in regard to them are: (1) The differentiation of the different layers shewed a decided retardation in relation to the age of the child; (2) the cells stained badly; (3) no obvious deformity or diminution in number could be made out.

There was a decided increase of the glia tissue, though the number of glia cells was in no great excess of the normal.

The vessels shewed the following changes: The intima shewed a distinct proliferation, though this did not result in the marked thickening so characteristic of congenital lues. The media was normal except for some cellular infiltration. The adventitia however was strikingly affected, especially in the way of infiltration. The adventitial spaces were very greatly dilated and were penetrated throughout by a close infiltration of round cells. These were of three kinds: (1) Small mononuclear cells; (2) larger mononuclear cells; (3) plasma-cells. These last were in considerable numbers.

In addition there was a cellular infiltration widely extending into the cortical substance. This mainly consisted of mononuclear cells, though a small number of plasma-cells were also present at a distance from the vessels. Every here and there, usually in the immediate neighbourhood of the vessels, the infiltration condensed so as practically to form a "miliary gumma."

One need hardly say that in the preparations no spriochætes were visible.

(c) *White matter.*—In general similar changes were found here, though to a much less extent. The differences were of a quantitative and not qualitative kind. The nerve-fibres were tolerably well preserved.

Conclusion.—The above-mentioned changes warrant the inference that in this case we have in all probability to do with a subacute case of lues cerebri. A noteworthy feature was the excess of the cellular infiltration over the other changes present.

The Society for the Study of Disease in Children.

A MEETING of this Society was held at 11. Chandos Street, W., on Friday, March the 20th, Dr. C. W. CHAPMAN in the chair.

A Paper on a Case of Granular Kidney in a Girl, aged 15 years, probably due to Congenital Syphilis, was read by the chairman, Dr. C. W. CHAPMAN. The patient had always been delicate, but it was not until three weeks previously that advice was sought on account of extreme difficulty in breathing and swelling of the feet and legs. The left ventricle was much hypertrophied, and the second sound at the base was accentuated; no thrill or murmur could be detected; the radial arteries were hard and thickened. The liver was enlarged nearly to the umbilicus. The urine was of specific gravity 1010, and contained 2½ per cent. of albumin and granular casts. The condition gradually became worse, and the patient died seven months later.

Post-mortem.—Both kidneys were markedly granular, the right weighing 2 oz. and the left 1½ oz. Inherited syphilis was suggested as the most probable cause of the condition found in the patient, as the bridge of the nose was depressed and the child's development was of one six years her junior, and the face had an aged aspect. There was no history of any one of the generally recognised causes of renal inflammation. The mother had had four miscarriages, while of the two children born at term one died at eight months from marasmus.

Dr. Porter Parkinson said it had long been suspected that many forms of nephritis were due to syphilis, both congenital and acquired, and to the former even in the adult.

Specimens and Drawings of a Case of Acute Pleuro-pneumonia with Extensive Fibrinous Plugs Visible to the Naked Eye in Dilated Lymphatics were shown by Dr. George Carpenter. The child, aged 9 months, was suddenly taken ill and died of pleuro-pneumonia of the right apex in forty-eight hours.

At the autopsy the solid lung displayed in profusion over the consolidated portion areas which had the colour and appearance of follicular stomatitis, and some were of irregular and branched outline.

The yellowish-white areas could be withdrawn from the lung; they broke off short in the attempt, leaving round and pear-shaped spaces in the tissues with just a suspicion of a wall of whitish colour. In their behaviour they were not unlike membranous casts of the bronchial tubes in diphtheria, but no obvious bronchial wall could be detected.

On microscopical examination these areas were seen to be made up of leucocytes and fibrin in varying proportions: the walls consisted of an endothelial lining only. In no part of them was there any alveolar structure or any suggestion of a destructive process. The fibrin plugs contained encapsuled diplococci, and were evidently situated in dilated lymphatics which were choked with the same material as that found on the pleura.

Dr. William Ewart was inclined to regard the case as one of ulcerative peri-bronchitis with subacute broncho-pneumonia of mixed fibrinous and corpuscular type.

A Case of Abdominal Ballooning due to widespread Anterior Poliomyelitis was shown by Dr. F. Langmead, in a child aged 1 year and 8 months.

There were evidences of a very extensive involvement of the anterior cornua which had occurred eighteen months previously. The legs were useless and allowed great mobility, easily meeting behind the head. The back was sharply curved to the left in the lumbar region. The abdominal muscles were paralysed, especially on the left side, so that on coughing or crying two rounded protrusions were produced, due to local yielding of the abdominal wall. The delivery was a normal one.

Dr. G. A. Sutherland said that in his experience this complication was very rare. In this case the onset was very early, viz. when the child was three months old, and that increased the difficulty of diagnosis. He showed photographs in two cases, which had been under his care, of congenital absence of a certain area in the abdominal wall, which closely simulated infantile paralysis.

A Case of Mongolian Imbecility associated with other Malformations was also shown by Dr. F. Langmead. The patient was an only child, and in addition to the characteristic signs of Mongolian imbecility was the subject of (*a*) congenital morbus cordis, probably due to an imperfect septum ventriculorum, and (*b*) an accessory auricle on the right side.

The Chairman (Dr. C. W. Chapman) asked whether these cases were connected with attempts made at abortion. He knew of one case in which he believed attempts had been made unsuccessfully, and the child was a Mongolian idiot, though the previous three children were normal.

Dr. G. E. Shuttleworth said that some time ago, in trying to get the ætiology of a Mongolian child, the daughter of a lady in fair position, who had a contracted pelvis, he found that she had been persuaded to undergo a starvation diet in order to have a small child. The result was the birth of a Mongolian imbecile at full term.

A Case of Chronic Rheumatoid Disease of both Knee-joints was shown by Dr. F. Parkes Weber. The patient, a boy, aged 10½ years, had enlargement of the lymphatic glands, ankylosis of both knee-joints, and limitation of movement in the hip-joints. He drew attention to the relative painlessness and consequent insidious progress of such chronic rheumatoid affections in childhood.

Dr. Edmund Cautley asked whether there was any evidence of gonorrhœal infection.

Dr. G. A. Sutherland said he did not think the case was typical of any one disease. If there was an acute onset, with marked lesions, at two and a half years of age that was against its being pure rheumatism. He thought it was due to some septic infection which had involved both joints and heart.

Dr. Parkes Weber, in reply, said that when he first saw the case it did not remind him of gonorrhœal rheumatism, and he saw no evidence of gonorrhœal infection.

A Case of Tuberculosis of the Kidneys with Pyonephrosis was shown by Dr. J. Porter Parkinson. The patient was a girl, aged 9 years. During the last eighteen months she had suffered from attacks lasting a few days, with fever, headache and pain in the left side of the abdomen. During the last attack a quantity of custard-like material came away with the urine. The liver was not enlarged, but the spleen extended slightly below the costal margin, and immediately below this, but more deeply situated, was a mass extending downwards for two or three inches, resistant and slightly nodular with a rounded lower end like a kidney. It was dull except for the colon resonance which could be obtained over it. The right kidney was also thought to be enlarged. Tubercle bacilli had been found in the urine, which was reduced in amount, being from 12–16 oz. daily. It was acid and deposited a large amount of pus; there was a trace of albumin, but no blood. During the last five weeks she had increased 6 lb. in weight, and the pus had almost disappeared from the urine.

Mr. Hugh Lett said that an attempt should be made to find out the efficiency of the opposite kidney by separation of the urine, and if it were working well he would advise nephrectomy. Tuberculous affections of the kidney were often very chronic, and he had seen cases in which the disease had existed for years, the patient having gone on well under palliative treatment, but the present case seemed to be one requiring operation.

Dr. George Carpenter said that pus and bacilli could not always be found in the urine because the corresponding ureter might be blocked, as had happened in cases under his care. In a child, aged 4 years, there was a large renal tuberculous tumour, a drawing of which he showed. The corresponding ureter was blocked by tuberculous growth. The kidney was removed successfully and the child recovered. In another child, aged 21 months, the corresponding ureter was blocked by a phosphatic calculus, the size of a marble. The kidney was caseating and full of tuberculous pus. He also showed a drawing of tuberculous pus in the urine with numerous tubercle bacilli. If a case of tubercle of the kidney were seen early, and there was no involvement of the bladder, removal of the kidney was a satisfactory proceeding. But if the kidneys and ureters on both sides and the bladder were involved, operation was out of the question.

Dr. Porter Parkinson, in reply, thought that the case would be far better treated by the ordinary medical measures than by surgery.

Sections of a Subcutaneous Fibrous Nodule removed from an Infant, aged 7 months, were shown by Dr. George Carpenter. The child was apparently free from rheumatism. This nodule had been removed from the neighbourhood of the angle of the left scapula, and there were also nodules in the occipital region. The nodule possessed a thin fibrous capsule, and was composed of a richly cellular areolar tissue free from organisms.

A Case of Laryngeal Stridor in an Infant, aged 6 months, was shown by Dr. George Carpenter. Since two weeks old it had breathed "like croup": there was much muco-purulent discharge from the anterior and posterior nares, but the naso-pharynx could not be examined digitally, and adenoids could not be absolutely excluded. The epiglottis and ary-epiglottic folds felt normal. There was no narrowing of the glottis; the cry was natural.

Dr. Edmund Cautley thought the proper treatment was to remove the adenoids.

Dr. Carpenter, in reply, thought the present condition might be due to reflex spasm, although anti-spasmodic drugs had proved useless. He was not sure that there were any adenoids to remove.

A Case of Cerebral Diplegia in a boy, aged 6 years, was shown by Dr. George Carpenter. The condition dated from eight months of age. He had oscillating nystagmus; the upper extremities were weak and tremulous on use; he had never walked, and the lower extremities were adducted and stiff and the reflexes exaggerated. He was of feeble intellect and unclean in his habits. There was no history of syphilis or of any intracranial disorder during infancy.

A Mongol, aged 5 months, with Congenital Morbus Cordis was shown by Dr. George Carpenter. The cardiac impulse was in the sixth space, half a finger's-breadth outside the nipple line. The heart extended a finger's-breadth to the right of the right sternal margin. There was a loud systolic murmur, best heard between the apex beat and the xiphoid cartilage. It was audible over the back and front of the chest, and was just heard in the great vessels of the neck. There was no thrill; a valvular snap was felt all over the præcordium with the systole.

A Specimen of Congenital Stricture of the Left Ureter from a Child, aged 2 years, together with the kidney and bladder, were shown by Dr. George Carpenter. The kidney showed interstitial changes of patchy distribution. The mucous membrane of the pelvis was intact, although the pelvis was dilated. The kidney was coarsely mottled white and violet. The stricture of the ureter was close to the bladder. The ureter was much dilated.

A Case of Juvenile Tabes was shown by Mr. Sydney Stephenson. The patient, a girl, aged 14 years, had bilateral optic atrophy, imperative desire to micturate, absence of one knee-jerk and enfeeblement of the other. The family history was suggestive of a syphilitic taint, although the patient showed no personal stigmata of inherited syphilis.

A Case of Infantile Hemiplegia in a Girl, aged 8½ years, was shown by Dr. F. W. Higgs and Mr. P. Turner. The hemiplegia appeared after a series of fits, at the age of ten months. There were lower facial paresis, spastic paralysis of the arm with athetosis of the hand and fingers, and paresis of the leg with a talipes varus, which was only present when the child walked quickly, and was probably of an athetoid nature also.

Philadelphia Pediatric Society.

Stated Meeting, March the 10th, 1908, J. P. Crozer Griffith, M.D., President.

Sporadic Cretinism.—Drs. C. F. Judson and W. N. Bradley showed a case of sporadic cretinism of the "fruste" type, in a child, aged 2 years and 9 months.

Dactylitis Tuberculosa.—Dr. James K. Young showed a case of tubercular dactylitis in an Italian boy, aged 7 years. Four years ago he had an abscess of the right thigh. A year later he had another abscess on the back of the left thigh, both of which were incised. Subsequently two lesions appeared in the skin, on the left wrist and right knee, which had all the characteristics of lupus. A kyphos developed in the lumbar region about the same time that the second abscess formed, and a year ago Dr. Young operated for double lumbar abscess. The dactylitis for which he is presented dates back two years, and is characteristic in appearance. The proximal phalanges of the index, ring, and middle fingers on the right hand are enlarged and contain numerous discharging sinuses. The X ray shows the formation of new bone in the periosteum, and examination of the pus from the sinuses shows the presence of staphylococcus from secondary infection. Tubercle bacilli have not been obtained from any of the sinuses, but the spinal deformity is so characteristic, and the dactylitis corresponds with the usual form of tubercular dactylitis so closely, that the case is presented as one of this variety.

Streptococcic Dactylitis.—Dr. Young reported this case. He called attention to the fact that up to the present only two forms of dactylitis had been considered, syphilitic and tubercular dactylitis. The discovery of the streptococcus as a cause of dactylitis by Dr. Young led him to believe that this should be considered as a possibility in the ætiology of dactylitis. The case was that of a girl, aged 1 year, who, eight months previously, had been bitten by some insect on the left hand. Subsequently the right ankle-joint became infected with streptococcus, abscesses formed in other parts, and dactylitis developed in the bitten hand. The finding of the streptococcus in the dactylitic thumb would seem to establish the possibility of this germ as a cause of dactylitis. Dr. Young considered the differential diagnosis between syphilitic, tubercular, and streptococcic dactylitis. The characteristic symptoms of the last are its origin in the synovial membrane, the involvement of all the structures of the joint, its rapid, painful progress, and ankylosis, or destruction of the articulation. The treatment recommended was incision and curettement. The importance of bacteriological diagnosis in doubtful cases was insisted upon.

Dr. F. C. Knowles showed the picture of a three-year-old girl, at St. Vincent's Home. The proximal phalanx of the middle finger on the right hand was the one involved. Over the tubercular dactylitis was a split-pea sized patch of lupus vulgaris.

Dr. S. M. Hamill said that he had applied the ophthalmo-tuberculin reaction in the case spoken of by Dr. Knowles, with a positive result.

Dr. A. P. C. Ashhurst said that he had seen a large number of cases of dactylitis at the Children's Hospital, and he would like to know how best to decide whether they were tubercular or syphilitic. He showed a photograph of one case, practically a duplicate of Dr. Young's case, in which two fingers were involved, showing sinuses and distinct granulations; the diagnosis in this case had been tubercular dactylitis. There was one termination of syphilitic dactylitis to which Dr. Young had not called attention—that form in which the proximal phalanx (that usually affected) becomes absorbed, leaving a shortened and flail-like finger; this termination Dr. Ashhurst believed to be more frequent than ankylosis as described by Dr. Young.

Dr. L. J. Hammond referred to the treatment of dactylitis, especially in the tubercular cases, by Bier's passive hyperæmia. He used it recently in two cases, one of which, an adult, can be claimed to have been entirely cured, and the other, a child under three years of age, while not entirely cured when last seen, was decidedly improved, even in face of the neglect on the part of the mother systematically to carry out the treatment. In the absence of mixed suppurative conditions of the joint, this treatment should be given a trial.

Dr. T. S. Westcott was most interested in the case of streptococcic dactylitis, as he had seen it in consultation. The ætiology was obscure, except for the suggestion of tuberculosis. Syphilis was out of the question. The cyst above the elbow formed within twenty-four hours, just before Dr. Westcott had first seen the child, He was glad to hear of the final diagnosis and recovery.

Dr. Emery Marvel thought that, when the primary lesion was dactylitis, excision should be considered. He had seen a case in which fatal termination resulted in tubercular meningitis, following tubercular dactylitis. He wondered whether it would not be best to amputate the affected fingers early, before further infection occurs.

Dr. J. H. McKee recalled a case of dactylitis in a negress, aged 4 years, who apparently had syphilitic dactylitis. Only after long-continued mixed treatment was any effect noted. Syphilitic dactylitis is usually symmetrical and affects all fingers on both hands. He thought Dr. Ashhurst's case surely tubercular dactylitis.

Dr. D. J. M. Miller advised using tuberculin in making the diagnosis between the tubercular and syphilitic forms of dactylitis. He had used it repeatedly, even in young infants, and had come to regard it as a most valuable means of diagnosis, one not employed often enough; he gave it by injection.

Dr. Young said that the differential diagnosis between specific and tubercular dactylitis has been frequently discussed and can be found in all textbooks. He laid stress on the signs found elsewhere in the patient and on the family history. Besides, the use of continued anti-syphilitic treatment is of value. He had not employed the Bier hyperæmia method in treating these cases. Dr. Young was also impressed by the rapidity with which the streptococcic case advanced. Amputation of primary tubercular dactylitis might be considered, but may be avoided by prompt excision of the affected area. If mixed infection occurs, with tubercle bacilli and other germs also, the affected finger might require amputation. Besides, tubercular dactylitis is unilateral, while syphilitic dactylitis is bilateral. The use of tuberculin is of great importance in making the diagnosis, and the ophthalmic test advised by Calmette is of value, responding in about 60 per cent. of his cases. The new tuberculin, Koch T.R., is, in Dr. Young's experience, the best for injection.

Polio-encephalitis Inferior.—Drs. C. F. Judson and H. L. Carncross reported this case in a boy, aged 4 years. The child became gradually ill, first showing, according to the mother, stiffness on coming downstairs in the morning. It was soon noticed that he staggered, held his head to the right side, and that his right eye was turned inward. Although dull the boy played about. On admission to St. Christopher's Hospital for Children, three weeks after the onset of the trouble, the patient had a marked cerebellar ataxia, with some paralysis of both external recti, more marked on the right side, deviation of the tongue to the left, and a very slight obliteration of the naso-labial fold on the left. There was no loss of power or wasting in the extremities, nor were there any sensory changes. There were mild degree of stupor, slight fever, abolition of the deep reflexes, and incontinence of urine and fæces. He had a coarse tremor of the hands on being roused. There was no inco-ordination in the recumbent posture. The temperature became normal two weeks after admission and the boy's condition improved. Six weeks after admission a typical uneventful attack of typhoid fever began, and ran a course of three weeks without developing new nervous symptoms. After two weeks' convalescence in the country the boy had completely recovered. The course of the disease was therefore barely three months.

Dr. Young called attention to the classification of these palsies, from the standpoint of the orthopædic surgeon. He objected to calling these diseases by so many different names, and thought the cerebral palsies should be kept separate from spinal paralysis, using only two divisions, as Strumpel and Osler have done. Under the term "cerebral kinderlämung" the Germans have included the two large groups of motor palsies—the cortico-spinal, involving the centres of the upper motor tract, and the spino-muscular, involving the lower portion.

The Technique of Lumbar Puncture and the Value of Cyto-diagnosis in Differentiating the Epidemic from the Tubercular form of Meningitis.—Dr. E. Burvill-Holmes described the value of this operation, both from a therapeutic and diagnostic standpoint. While he has seen a death on one occasion which was probably directly due to it, he considers that it is practically free from danger, basing his opinion on the experience of 400 operations in which he has never met with any untoward results. As a point of entrance into the canal, he suggests Chipault's foramen, the space between the fifth lumbar and first sacral vertebræ, upon the logical grounds that the morphological elements of the fluid, leucocytes, and bacteria naturally fall to the more dependent parts. As an instrument he prefers the trocar and cannula to the hypodermoclysis needle, for the reason that the latter is inevitably bent or broken should failure to strike the canal occur. He always, at least when circumstances permit, has the patient assume the sitting posture, as he has found that, when the fluid would not flow while the patient was lying down, it did flow as soon as he sat up. By a series of tables he demonstrated the value of cyto-diagnosis in differentiating these forms of meningitis, and stated that, while he appreciated that the number of tubercular cases which he had the opportunity of studying were few, the results in those cases showed the trustworthiness of this method. In all the cases (eight) which showed at autopsy either macroscopical lesions of tubercular meningitis or miliary tuberculosis without such macroscopical evidence, lymphocytosis existed, while the epidemic variety invariably revealed a polynucleosis, and this in many cases had become chronic, being found in one case as late as the ninety-first day. He cited a case in which a boy, aged 8 years, was admitted into the Municipal Hospital on the third day of an attack of epidemic cerebro-spinal meningitis, but developed tubercular meningitis on the fifth-fourth day. On admission Gram-negative diplococci were found and a polynuclosis of 98 per cent. On the fifty-fourth day the cerebro-spinal fluid was clear, tubercle bacilli were present, and the cytological formula was reversed, 61 per cent. of lymphocytes being present.

Dr. Alfred Hand, jun., agreed with Dr. Burvill-Holmes that the presence of an excess of lymphocytes is characteristic of tubercular meningitis, but in Dr. Hand's experience this has not been the absolute rule. One striking exception was found in a patient of Dr. Davisson's, a child, living in close contact with an adult in the last stages of pulmonary tuberculosis. The fluid from this patient showed a slight predominance of polymorphonuclears, while tubercle bacilli were present in almost every field in countless numbers—an unusual feature, as they are ordinarily rather scarce. Further, it is not always easy to make a differential count of the leucocytes, as some of them may be distorted or degenerated. But in the majority of cases they are a valuable confirmatory point in the diagnosis, which, Dr. Hand feels, ought to be absolute in something over 99 per cent. of cases, by finding the tubercle bacilli, provided that certain points in the technique are observed. He also ranks chemical examination of equal importance with cyto-diagnosis; he has yet to see an exception to the rule that tubercular cerebro-spinal fluid has more than 5 per cent. of albumin by bulk, using the graduated centrifuge tubes, and always contains sugar by the phenylhydrazin test, while the fluid from the pneumococcal or meningococcal meningitis contains not more than 5 per cent. of albumin and gives no reaction for sugar.

Dr. BURVILL-HOLMES stated that the best method to demonstrate tubercle bacilli in the spinal fluid, when these were few and ordinary methods had failed, was by digesting the fluid with a solution containing hydrochloric acid and pepsin.

Congenital Unilateral Hypertrophy.*—Dr. C. H. MUSCHLITZ reported this case in an infant, aged 4 months, involving only the left arm and left leg. The condition was first noted by the mother when the child was one and a half months old. The radiogram shows involvement of the muscular and subcutaneous tissue and very slight enlargement of the bony structure. In reviewing the literature it was noted that this form of hypertrophy is quite rare, and record of a left-sided case exactly like this was not found.

Heterotaxia with unusual Heart Malformations.—Drs. B. F. ROYER and J. D. WILSON reported the case of a boy, aged 6½ years, who entered the Municipal Hospital with scarlet fever. He had been a blue baby at birth, but had only had measles and pertussis. Examination of the heart showed a slight palpable thrill, systolic in time, in the parasternal line in the fifth left interspace, and also in the mamillary line of the left third interspace. The apex beat is diffuse but is plainly palpable in the usual location. The maximum intensity of this impulse is noted at the xiphoid cartilage and throughout the upper epigastrium. On percussion heart dulness is found slightly increased in all directions, with thoracic dulness shading the abdominal dulness internal to the mamillary line on the left side. Similar dulness is noted on the right side. On auscultation a loud blowing systolic murmur is heard over the entire chest, transmitted to both axillæ, to the angles of both scapulæ and to both sides of the neck, and is heard over the aortic and pulmonary cartilages and at the xiphoid. The abdomen is tympanitic and greatly distended, palpation of the liver and spleen being impossible. On percussion there is plainly less dulness in the liver region than is normal, while dulness in the splenic region is much greater than normal.

The scarlet fever ran a mild course: varicella developed after the febrile stage and caused no disturbance except slight fever. A provisional diagnosis of transposition of the abdominal viscera was made. Death occurred suddenly, twenty-four days after the onset of the scarlet fever, and in the declining stage of the varicella.

Pulmonary stenosis was diagnosed because of the location of the murmur and its transmission, the thrills and their location, the shape of the fingers, and the history of the case; patulous ventricular septum, because of the long-continued cyanosis—since birth; patulous auricular septum, because this is very commonly associated in these cases. A diagnosis of patent ductus arteriosus or aortic stenosis was made because the murmur was heard as well at the aortic as at the pulmonic area, and because of the loud transmission to the right side of the neck. Hypertrophy of the right ventricle was suspected, because heart dulness could be noted to the right of the sternum.

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* *Vide* "A Case of Hemi-hypertrophy in which the Internal Organs were Affected," by Robert Hutchison, M.D., 'Reports of The Society for the Study of Disease in Children,' vol. iv (1903–4), pp. 145—147; also "A Case of Hemi-hypertrophy," by George Carpenter, M.D., and Lockhart Mummery, B.C., *ibid.*, vol. vi (1905–6), p. 153.—ED.

Autopsy showed complete transposition and considerable downward displacement of the abdominal organs. The liver occupied the left hypochondriac and epigastric regions, extending 8 cm. to the right of the median line. The largest lobe was on the left side, and the quadrate lobe was rudimentary. The gall-bladder was attached to the under-surface of the right lobe. There were five spleens, in relation with the diaphragm, lower four ribs on right side, right kidney and fundus of stomach; the latter organ lay on the right side, the pylorus directed upwards and to the left. The head of the pancreas was to the left of the median line and to the left of the duodenum; the tail on the extreme right reached to the spleens. The mesentery rose from the right side, in front of the lumbar vertebræ, and was directed downward and to the left. The cæcum and appendix were in the left iliac fossa. The sigmoid was on the right, the abdominal aorta also, while the inferior vena cava lay on the left side. The left kidney lay on a lower level than the right. The right renal vein was longer and received the spermatic; the left renal artery was longer than its fellow.

In the thoracic cavity the lung with three lobes was on the left, the bilobed organ being on the right. The left bronchus was shorter and more horizontal than the right. The relations of the vagi to the œsophagus were changed. The right recurrent laryngeal wound around the aorta; the azygos major was very large and on the left side. The thoracic aorta lay principally on the right. The thoracic duct lay between the two and entered at the junction of the right jugular and subclavian veins.

The greater part of the heart was to the left of the median line. The right ventricle presented anteriorly. The left auricle received the inferior and superior cavæ. The right auricle received five pulmonary veins. The foramen ovale was widely open. The aorta and pulmonary artery both arose from the right ventricle. The base of the pulmonary vessel showed moderate stenosis, but its orifice was entirely muscular. The right auriculoventricular orifice was large and had three segments to its valve. The left ventricle was rudimentary, a small slit-like opening connecting it with the left auricle. A small opening in the ventricular septum established communication between the ventricles. The left coronary artery supplied the anterior surface of the heart. The orifice, valves, papillary muscles, moderator band, blood-supply and general contour of this right ventricle corresponded to those of the normally placed right ventricle. The arch of the aorta did not extend to the right of the median line. Both carotids and both subclavians arose as separate trunks. The ductus arteriosus was obliterated.

The diagnosis was heterotaxy without dextrocardia; congenital pulmonary stenosis; congenital mitral stenosis; rudimentary left ventricle; common ventricle for aorta and pulmonary artery; patent foramen ovale; incomplete ventricular septum; transposition of auricles and anomalies of the large blood-vessels.

Dr. W. M. L. Coplin said that this case showed that probably any malformations that we might suggest may evidently arise; any transposition, it seems, may be found. This case is of great scientific interest as all of the organs, except the heart, are transposed.

Dr. J. P. Crozer Griffith said that he had seen two cases which resembled this one, which came to autopsy, and they both showed pulmonary stenosis and perforate ventricular septum.

Dr. Royer spoke of the transmission to the vessels of the neck of the murmur heard during life which caused him to diagnose aortic stenosis, or patulous ductus arteriosus, and stated that the malformations found at autopsy fully explained it. The heart for practical purposes was a three-chambered organ. The aorta and pulmonary artery both emerged from a common right ventricle. The stenosis at the pulmonary outlet caused the murmur in this chamber, from which it was transmitted equally well along the blood-streams in both the aorta and the pulmonary artery.

Abstracts from Current Literature.

Medicine.

Hæmorrhagic typhoid fever (*'Arch. of Pediat.,' November*, 1907, *p.* 841).—**Woodward** records two cases of this condition, which is very rare except in childhood and adolescence. The first case was that of a girl, aged 11 years, who stated that she had had typhoid some years previously. On the 14th day there was copious epistaxis, which was repeated on the 22nd and 29th days. There was also some bleeding from the gums on the 22nd. On two occasions there was slight hæmoptysis. Purpuric spots were noted on various parts of the body from time to time. Complete recovery took place. Two years later she had a third attack of typhoid fever, this time uncomplicated. The second case was that of a hitherto healthy girl, aged 7 years, who, on the 15th day, had considerable bleeding from the nose and anus. On the 16th day there were several ecchymotic spots on the arms, legs, and back, and bleeding from small ulcers on the anus, vagina, and scalp. Subsequently bleeding took place from fissures on the knees, and purpuric spots appeared on the forehead. On the 17th and 18th days tarry stools were passed. On the 23rd the child became suddenly cyanosed and died. The autopsy showed healing ulceration of Peyer's patches and an ante-mortem clot in the left ventricle with branches extending into the pulmonary vessels. J. D. ROLLESTON.

Ulcerous glossitis caused by Vincent's fusiform-spirilla without Vincent's angina; cure (*'La Medecina de los Niños,' July*, 1907).—**Font** describes the case of a girl who suffered from ulceration of the left side of the tongue attended by rigors, fevers, etc. Examination showed the presence of Vincent's fusiform spirillæ. There had been admitted to the same ward some months previously another child with a similar disease. A cure was effected in four days by applying every three hours a lotion containing 1 per cent. of $HgCl_2$ and 1 per cent. of phenol. M. D. EDER.

Three cases of recidivism measles (*'El Siglo Médico,' November* 16, 1907).—**Alvarez** reports three cases of quite typical measles where in eight to ten days there was a renewal of the usual premonitory symptoms followed in due course by the characteristic rash. He has seen many epidemics of measles and many cases of a second or third attack, but never at such short intervals. He suggests as an explanation that the immunity conferred by first attack was ineffectual, that in each case there was a fresh reinfection with a short inoculation period. M. D. EDER.

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Original Articles.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS: A CRITICISM OF ITS PATHOLOGY IN RELATION TO TREATMENT.*

By Edmund Cautley, M.D., F.R.C.P.,
Physician at the Belgrave Hospital for Children and Physician at the Metropolitan Hospital.

Such widely divergent opinions have been expressed on the treatment and pathology of the affection known as congenital hypertrophic stenosis of the pylorus, infantile pyloric hypertrophy, or congenital gastric spasm, that I have thought it worth while to put before you a few observations and comments on the pathology of infantile pyloric obstruction and the manner in which a cure may be brought about by medical treatment. Without a plausible explanation of the relationship of the treatment to the pathology it does not appear possible to estimate, with any approach to accuracy, the value of medical treatment or the necessity for surgical interference. On the one hand it has been stated that no case will recover under medical treatment; and on the other, that surgical measures are unnecessary, and that all cases will get well if treated by careful lavage and dieting. No doubt the truth lies between these extremes, and it is probable that the extremes really represent two different affections.

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* Read before The Society for the Study of Disease in Children, January the 17th, 1908.

My own views are well known to you. I believe that there are two different diseases:

(1) Pyloric spasm.

(2) True pyloric hypertrophy, which may or may not be associated with spasm or secondary effects, and may be moderate or excessive in extent.

In fatal cases and in those submitted to operation the naked-eye evidence of hypertrophy is conclusive proof of the accuracy of the diagnosis. When recovery ensues no such absolute proof is available. A trustful reliance on dilatation of the stomach, peristalsis, and even a palpable pyloric tumour is not always warranted. I have known cases in which the pylorus was said to be distinctly palpable and yet no hypertrophy was found after death.

It is interesting to observe that ten years ago the existence of this hypertrophy was not readily admitted, and that, by those who recognised the affection, it was regarded as extremely rare and difficult to diagnose. Now, the statements of some physicians would lead one to suppose that the affection is very easy to diagnose and remarkably common. My own experience confirms the first view. I have seen eighteen cases in ten years, and in spite of the anxiety with which I look out for such cases, only one of them has been under my care in the last year, and a further case seen in consultation after operation, which is not included in these figures.

The pathology must be considered in reference to spasm, hyperacidity, hyperplasia, and secondary effects such as gastric catarrh, œdema of the pyloric mucosa, and gastric dilatation.

Pyloric spasm.—Is there such a condition as pyloric spasm? Can it give rise to hypertrophy or can it exist for a long time without causing hypertrophy? Are the symptoms due to pyloric spasm liable to be mistaken for those due to hypertrophy? There seems little doubt that pyloric spasm can occur at all ages, and that it may prove fatal in infants without causing hypertrophy. Such a case I have already reported to this society (vol. vi, p. 39). The babe, aged 11 weeks, was admitted to hospital under my care for supposed hypertrophy of the pylorus. The vomiting had existed since birth, and was extreme. It ceased while in hospital, but death ensued on the day after admission, and no hypertrophy whatever could be found after death. I have seen many similar cases which have ended in recovery under medical treatment and in which there was no pylorus palpable during life.

On theoretical grounds I am inclined to maintain that pyloric spasm does not cause hypertrophy. There is no analogous hypertrophy in other parts of the alimentary canal as the result of spasm. Prolonged anal spasm does not cause it. Provisionally, until our knowledge of the subject is more certain, I accept the view that the action of the pylorus is similar to that of a closed door, which opens in response to certain stimuli. The pylorus is normally in a state of contraction, and only dilates to allow the passage of the contents of the stomach in response to stimuli received from the duodenum, dependent on the reaction of the duodenal contents. If this is the physiological action of the pylorus, it is barely credible that the amount of spasm sufficient to oppose the stimulus to dilatation can be great enough to produce the excessive hypertrophy of the circular muscular fibres so constantly present. There are both circular and longitudinal muscular fibres in the pyloric sphincter, but the hypertrophy is practically limited to the circular fibres, or, at any rate, the longitudinal fibres are relatively very little increased in bulk. If the longitudinal fibres possess the power of dilating the pyloric sphincter, how is it that they do not show marked hypertrophy as the result of pyloric spasm? If they act as opponents of the circular muscular fibres, one would expect that they would undergo a degree of hypertrophy proportionate to the hypertrophy of the circular muscular fibres. There is no such hypertrophy. It must be admitted that pyloric spasm may occur at any age, and that it is not an affection peculiar to the first few months of life. If this be the case there should be proof available of hypertrophy associated with spasm at all periods of life, that is, in cases in which there is no history pointing to pyloric trouble dating from early infancy, and we must admit also that it can occur *in utero*, for hypertrophy has been found in a seven months fœtus.

The cause of spasm is uncertain. It is generally ascribed to hyperacidity. Possibly it may depend on the toxines of decomposing food or result from dilatation. Using Toepfer's reagent (not a reliable indicator of hydrochloric acid) Knöpfelmacher found hyperacidity. It is probable that it can occur, though rarely, in infancy. Freund claims that he has cured pyloric hypertrophy by a diet of undiluted cow's milk. Such milk combines more readily with hydrochloric acid than does breast-milk, and hence there is less free acid. In the breast-fed child free acid appears in the stomach in about an hour and a half. On a diet of cow's milk it does not appear for two hours or more. R. Miller and W. H. Willcox ('Lancet,' 1907, vol. ii, p. 1671) have recently published some valuable observations on the gastric secretion in three types of cases in infants. In marasmus or atrophic dyspepsia the acidity and ferment activity of the secretion were diminished. There was no mucin and no retention of stomach contents, and the stomach was nearly emptied in thirty minutes after a test meal. In five cases of hypertrophic stenosis, four of which were verified after death, they found much mucin, marked retention of stomach contents, marked increase in ferment activity, and variable acidity with a tendency to diminution, probably dependent on the degree of gastritis, and, therefore, due to the secondary effects and absent in early stages. All these results were modified by systematic lavage, but the fatality does not appear to have been influenced thereby. In the third type, pyloric spasm or acid dyspepsia, they found no mucin, no retention of food, increased acidity, and normal or subnormal ferment activity. A dilated stomach might be seen to "stand up" on tapping, but there was no true peristalsis and no palpable tumour. They found further that if the gastric juice from a case of pyloric hypertrophy was added to milk, it caused firm and rapid clotting, and that milk was consequently a bad diet in such cases—a result diametrically opposed to Freund's observations. These patients with hyperacidity, especially when bottle fed, are liable to be diagnosed erroneously as suffering from pyloric hypertrophy. Dilatation of the stomach is common in the bottle-fed, and, if it is associated with wasting and pyloric spasm, it is obvious that a dilated viscus can be mapped out and that a contraction, suspiciously like the peristalsis of true hypertrophy, may be obtained on tapping. The vomiting may be similar in character as well.

The hyperplasia theory.—The other view of pyloric hypertrophy is that it is a congenital hyperplasia. It is possible that Nature, in her extreme anxiety to create an efficient pyloric sphincter, has over-exerted herself and produced too great an amount of muscular tissue. Perhaps it is a reversion to an ancestral type of stomach. The occurrence of this hypertrophy in a seven months fœtus has already been mentioned. If this solitary case be regarded as little evidence, I would point to the fact that all these cases occur within the first three or four months of life, that the symptoms generally arise within the first three weeks, and that often they begin as soon as the child is put to the breast. They occur in the breast-fed more frequently than in the bottle-fed, probably because the majority of infants are at first breast fed. The early onset of symptoms is to my mind absolutely a proof of an ante-natal origin, but I am not prepared to accept Dr. John Thomson's theory of intra-uterine spasm dependent on inco-ordination, or that such spasm or inco-ordination can produce hypertrophy. The theory of hyperplasia affords a plausible explanation of the course of the disease, the variability in the degree of hypertrophy, and the possibility of curing some cases by medical treatment. At birth there is a pylorus which contains an excess of circular muscle-fibres, but the canal is patent, or may be so, sufficiently to permit the exit of enough food from the stomach to maintain life and provide for growth. If it remains in this state, and the food is of a character to pass through with ease, there may be no symptoms. In some cases normal stools are passed during the first week or two of life. Usually the circular muscle gradually contracts and narrows the lumen, or it becomes so rigid that it is unable to dilate sufficiently for the ready exit of the stomach contents. Then the stomach slowly dilates and the characteristic symptoms of a dilated stomach develop. Sometimes the symptoms are very slight at first and then become so acute that everything is vomited, and the ejecta may be bloodstained. This may be due to secondary gastritis, or an acute œdema of the pyloric mucosa, the result of the contraction interfering with the local circulation of blood and lymph. It is very noticeable that in such instances the pylorus is found at operation intensely congested, almost purple in colour.

It seems to me that this theory best explains the various types of the disease which come under our notice. Thus we may find a palpable pyloric tumour, little or no vomiting, and no evident dilatation of the stomach. These patients may continue for days or weeks without definite or characteristic vomiting, even though not treated by lavage. They may even gain considerably in weight when suitably fed, and possibly get well, if the pyloric canal does not undergo further constriction and none of the secondary effects arise. My own experience is unsatisfactory. Three out of my last thirteen cases have been of this type. They were not submitted to operation, they gained weight at times, and they eventually died. In another variety there is definite dilatation of the stomach. Here, too, I am prepared to admit the possibility of recovery without surgical interference, provided that the dilatation of the stomach can be cured and the degree of obstruction is only moderate. Some of these have associated gastritis, on which the acute symptoms depend. This may improve on careful dieting and systematic lavage. In the cases of the above types fæcal matter is found in the stools, though not always if there is much gastritis. In the more severe forms, some of which are extremely acute in their development, the stools contain no fæcal matter and consist of bile, mucus, and epithelial *débris.* Vomiting is marked, often characteristic, and peristalsis is evident. Dilatation develops in a short time, but it is not advisable to wait for its development in order to clinch the diagnosis. The pylorus cannot always be felt, for the baby may be quite fat. Even in marasmic infants it is not always possible to be certain that one can feel the pyloric tumour.

The medical treatment.—If medical measures are curative there must be a rational explanation of their mode of action. Drugs appear to be useless. Dieting consists in giving a food which is as little irritating as possible, and contains little solid material. Whey and albumin-water fulfil these indications. Breast-milk is suitable, but many cases have occurred in breast-fed infants. Such a diet can only prove beneficial because it is able to pass through the unduly narrow pylorus or by preventing spasm. If the spasm is due to hyperchlorhydria undiluted cow's milk or a food rich in proteid ought to have the best effect. Some of the milk-proteid preparations might be tried. I have not found undiluted cow's milk retained in cases of true hypertrophy. Whey or albumin-water would be suitable if there is simply narrowing of the pylorus without secondary effects. It may prove beneficial in the reduction of gastritis. It may prevent spasm if the spasm is due to indigestible curds of milk and not to excess of acid. To cure the child it must be sufficiently nutritious to maintain life and provide for growth. At first it often produces remarkable gain in weight, for the child has been previously suffering from starvation. Usually the good effects only last for a week or two at most, and then the symptoms reappear, or the child ceases to gain weight, and any increase in the strength of the food at once induces vomiting. Hence it appears that diet alone may be curable in cases of pyloric spasm, and possibly in a few mild cases of true hypertrophy.

The other great remedial measure advocated is lavage. It seems to me that the exponents of this treatment must advocate it on the grounds that it clears the stomach of irritating contents, and so prevents spasm—that it reduces the gastric dilatation and cures the gastritis. Undoubtedly the vomiting varies directly with the frequency of the lavage, for the stomach is kept more or less empty and freed from irritating contents. If the case is one of simple spasm, due to stomach irritation, lavage is obviously a simple measure and likely to prove curative. It is extremely difficult to understand how it can cure simple hyperplasia if there is no dilatation, no catarrh, and a pylorus which permits the passage of a certain amount of food through it. On the other hand, it should prove beneficial when one or more of the secondary effects are present. Then, if the obstruction is not so severe as to be incompatible with life, the patient may recover, but the recovery is from the secondary effects and not from the hypertrophy. Such cases might, therefore, be regarded as unimportant if the child is not so fed as to develop these secondary effects.

Basing my opinion on the above arguments as to the pathology and mode of action of medical treatment, I hold that there is grave danger of ascribing to pyloric hyperplasia the symptoms due to spasm, with or without dilatation of the stomach; that there are mild degrees of hyperplasia compatible with life and giving rise to no serious symptoms; that some of these mild cases depend for their fatal issue on secondary complications which are curable by diet and lavage; that the majority of the cases tend to gradual contraction of the circular muscle and a degree of obstruction which is incompatible with life and only curable by surgical methods. And I protest most strongly against delay in adopting surgical measures, as I am convinced that the bulk of the supposed cures of this affection by medical means are really instances of simple pyloric spasm. Great care is essential in distinguishing between spasm and hypertrophy, otherwise it is undoubted that many unnecessary operations will be performed.

A CASE OF RHABDO-MYOSARCOMA OF THE PROSTATE IN A CHILD AGED FOUR YEARS.

By David M. Greig, C.M., F.R.C.S.Eng.,
Surgeon Dundee Royal Infirmary; Lecturer on Clinical Surgery and Surgical Diseases of Children, St. Andrew's University, etc.

The subject of this very rare condition was sent to me by Dr. Lawrence in August, 1906, on account of dysuria and frequency, of three weeks' duration. The parents were in good health, and the patient a healthy, well-nourished child. He was the youngest of twelve, of whom eight were well, and of those dead one died, aged 15 months, of rheumatic fever, one was stillborn, one died, aged 8 months, of "consumption of the bowels," and one only lived a fortnight, but the actual cause of death was not now ascertainable. The patient had had no previous indisposition. The present illness appeared to have started three months previously when he had gone to reside with a relative in the country. The onset was characterised only by incontinence, both nocturnal and diurnal, and was unaccompanied by pain or any other untoward symptom. He had returned from the country three weeks before I saw him, and for the first three days thereafter his mother noticed neither incontinence nor frequency. He then began to complain of pain during micturition. It occurred on every occasion, and was now accompanied by frequency, which rapidly increased until he had to pass urine every quarter of an hour. The pain and frequency made him very restless at night, and he lost appetite, though his mother did not think that he lost flesh. Thereafter the urine had never come freely, and at times the pain had been so severe that his mother thought he looked "as if he were to have a fit." He passed only about a table-spoonful at a time, and a thick, sticky sediment was deposited, composed of pus cells and some oxalate of lime crystals. The reaction was neutral or slightly alkaline. The urine was constantly dribbling away, and the constant pain seemed to have exacerbations during which the child screamed loudly.

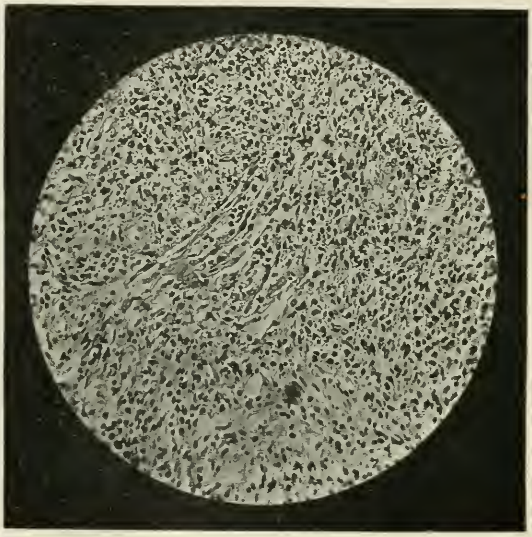

Fig. 1.—Section of rhabdo-myosarcoma of prostate × 117; shows the general arrangement of the tissues and the sarcomatous cells.

On examination of the abdomen the bladder was felt as a rounded, firm, regular tumour, rising through the hypogastrium into the umbilical region out of the pelvis. Naturally, palpation at this part increased his pain. In this condition he was admitted to the Children's Ward of the Dundee Royal Infirmary. The urine presented the same characters as above, but examination for tubercle bacilli was negative, and in addition to the pus and oxalate of lime it now contained some blood. Under an anæsthetic a sound passed into the bladder failed to detect any stone. The bladder was found to be very capacious, the metal catheter passing in for six and a half inches, and the tumour in the lower abdomen disappeared entirely as the bladder emptied. On withdrawal of the catheter blood oozed from the meatus, and some portions of what was apparently a new growth came away in the eye of the instrument. Rectal examination revealed a large, firm tumour at and above the site of the prostate.

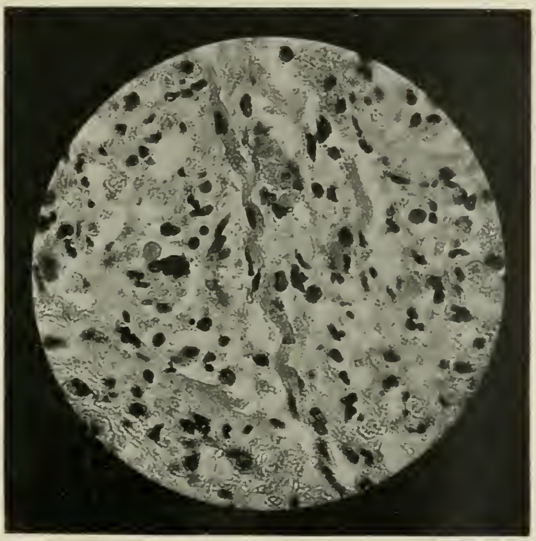

Fig. 2.—Section of rhabdo-myosarcoma of prostate × 350; shows a very distinct muscle-fibre (striated) running almost vertically through the centre of the field.

On the following day the child was again anæsthetised, a supra-pubic cystotomy was performed, and a large, irregular, fungating tumour, the size of a Tangerine orange, was found projecting into the bladder around the internal urethral meatus. Most of this was broken down by the finger and removed. The bladder wall was stitched to the skin and a permanent supra-pubic drain inserted. This was followed by great relief from pain, and a few days afterwards the child was removed home, where he died ten days later.

The tumour was kindly examined for me by Mr. J. W. Thomson Walker, and later by Professor Sutherland, of Dundee University College. The former wrote: "It is a sarcoma with embryonic striped muscle cells, a rhabdo-myosarcoma. The muscle cells are found in parts of the tumour and are absent at others." The latter, after a more detailed examination, reported that in one of the blocks examined he failed to find anything like striped muscle. In other blocks, however, there were present structures which could be nothing but muscle-fibres. Striation was faint but distinct enough to warrant the diagnosis of rhabdo-myosarcoma. The sarcomatous cells were spindle shaped with marked variations in the size of the spindles. The muscular fibres also varied much in size, long forms being found with some difficulty. The glandular elements of the prostate had practically disappeared, but here and there were found structures which might be regarded as survivals. The blood-vessels were present in tolerably large numbers and had thin walls. To the naked eye the tumour was homogeneous and grey, and was of uniform and fairly soft consistency.

The condition is an extremely rare one, and I have only been able to find one reference to it. Socin and Burckhardt ('Die Verletzungen und Krankheiten der Prostata,' Stuttgart, 1902) contribute three cases, and state that rhabdo-myosarcoma of the prostate had not been previously recognised. This is a rare variety of tumour in any part of the organism, but, by analogy, one would not expect the prostate to be exempt from it. The authors suggest that cases of rhabdo-myosarcoma may be concealed amongst the many cases of sarcoma of the prostate which have been massed together. They quote Wolfensberger (" Ueber ein Rhabdomyom der Speiseröhre," 'Zeigler's Beitr.,' 1894, Bd. 15), who has collected sixty-three cases of sarcomata, thirty-eight of which affected the urogenital system and its neighbourhood, and yet no single case of rhabdo-myosarcoma occurs in this extensive table, and they were unable to find the record of any other case previous to the publication of their own in 1902. Socin and Burckhardt give a table of twenty-four cases of sarcoma of the prostate :

8 round-celled (large, small, or myxomatous).
4 spindle-celled.
2 angio-sarcoma.
2 lympho-sarcoma.
2 dense myxosarcoma.
2 so-called " polymorphous-celled " sarcoma.
1 adeno-sarcoma.
3 rhabdo-myosarcoma.

On account of the rarity of this disease I may be excused if I conclude by referring in brief detail to Socin and Burckhardt's three cases.

CASE 1.—A child, aged 9 months, had for six weeks been troubled with dysuria and for two weeks with abdominal swelling due to distension of the bladder. He was catheterised for the first time and with difficulty fourteen days before death. The child died with convulsions seven weeks from the commencement of the crying (dysuria), and much meteorism preceded the convulsions. The muscle elements of this tumour tended to be of an early or fœtal type, and Socin and Burckhardt suggest that these might be confounded with a sarcoma of pure connective-tissue origin were the examination inefficiently carried out.

Case 2.—A boy, aged 4 years, had increasing pain in the urethra followed by retention, which necessitated catheterisation, the passing of the instrument not being free from difficulty. The penis was swollen and red, and pus escaped from the urethra. He became pale and thin, and the urine bloody and purulent. He had a continual high fever and rigors, and enlarged glands appeared in the iliac fossa. Diarrhœa, vomiting, and increasing weakness preceded death, which occurred five months after the appearance of the first symptom. He had throughout, spontaneous micturition with some residual urine, and, at the post-mortem, some dilatation of the ureters was found.

Case 3.—A mechanic, aged 26 years, whose chief symptom was the constant vomiting of all foods. He had widespread metastases, the liver, lungs, pleura, gastric mucosa, thyroid, dura mater, and numerous bones being affected. He lived for four months after the onset of the first symptom.

A CASE OF CHRONIC RHEUMATOID DISEASE IN A CHILD WITH ANKYLOSIS OF BOTH KNEE-JOINTS.*

By F. Parkes Weber, M.D., F.R.C.P.,
Physician to the German Hospital, Dalston.

The patient, Arthur S—, now aged 10½ years, was the first of the two cases described by me in a paper entitled "Still's Type of Chronic Joint Disease in Children, and the so-called Tuberculous Rheumatism" (British Journal of Children's Diseases, May, 1905, p. 208). The disease, which seems to have commenced acutely in the latter part of 1900, was chiefly characterised by swelling of the hands and feet, cervical rigidity, and moderate enlargement of the spleen and superficial lymphatic glands, that is to say, whilst the patient was first under my care in the German Hospital (1901). Under treatment by rest, aspirin, iodide of iron, arsenic, malt, etc., the condition, in regard to the swelling and tenderness of joints and the general appearance of the child, fluctuated considerably. The wasting of the muscles of the limbs at first progressed. Occasionally there was moderate fever, and about the beginning of November, 1901, there was an attack of endocarditis, and the heart began to show signs of mitral valve disease. Since that time the heart has remained somewhat enlarged, though no cardiac murmur can at present be detected, excepting a slight systolic one of Potain's "cardio-pulmonary" type, present only during inspiration. In February, 1902, the temperature began to remain below 100° F., and the child had a good appetite, put on flesh, and seemed happy and free from pain and tenderness in the joints. In fact the absence, or relative absence, of pain and tenderness in the swollen hands and feet, and at the other affected articulations, was specially noteworthy in this case, and seems to be remarkably characteristic of the whole clinical class of cases to which this one belongs. Röntgen ray photographs showed no bony changes at the articulations, the exudation being apparently gelatinous and periarticular.

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* Exhibited at The Society for the Study of Disease in Children, March the 20th, 1908.

In May, 1902, there was a slight attack of (catarrhal?) jaundice, and unfortunately in December of the same year the boy contracted enteric fever. In December, 1903, he was again in the hospital with occasional fever, swelling of the knees, and some increase in cervical stiffness. In spite of all this, however, very great improvement occurred, and the following note describes the condition when I saw him in December, 1904: "He looks well and goes to school. There is scarcely any stiffness in the vertebral column, and the movements in his limbs are quite good. There is still puffiness over the back of the proximal part of each metacarpus, and some thickening of the fingers; also some thickening over the back of both feet and some swelling of both knee-joints. Apparently no pain anywhere. The spleen can just be felt on inspiration. The axillary glands on both sides are slightly enlarged. The cardiac apex beat is half an inch outside the nipple line, and there is a slight systolic apical murmur."

When I saw him in August, 1906, his condition appeared satisfactory, though he had slight genu valgum. He looked bright and active, and walked well. I then thought that he was practically cured. However, I understand that later on in the same year he again fell ill at home, but I did not see him till August, 1907, when he was re-admitted under my care in a quite crippled condition.

There was then much swelling of the knees, elbows, ankles, wrists, and sterno-clavicular joints, and less swelling of some of the smaller joints of the hands. The legs were drawn up, that is to say, the hip-joints and knee-joints were flexed, and owing to adhesions the knee-joints could not be extended. The legs had been apparently drawn up for about two months. There was a small recent bedsore in the sacral region. The movements of the vertebral column and of the head were fairly good. The ribs showed very marked rickety "beading." There was scarcely any fever, and the joint trouble seemed to be practically unaccompanied by pain or tenderness.

In the hospital the boy's condition improved slowly, and on January 7th, 1908, under chloroform-anæsthesia, both knee-joints were forcibly extended (Dr. E. Michels) and fixed in plaster bandages. During the necessary manipulation of the joints the upper tibial epiphyses were unavoidably separated on both sides. The plaster bandages were removed on January 31st, but the left knee-joint soon tended to become again flexed, and consequently had to be put up again in plaster. He is now beginning to walk with help, but this is very difficult, not only on account of the fixation of the knee-joints, but also on account of great limitation of movement in the hip-joints. Owing to partial (incomplete) fibrous ankylosis of these joints in a faulty position the thighs cannot be fully extended, and the boy cannot therefore stand up straight without considerable lordosis of the lower part of his spinal column. There is still a certain amount of swelling at the backs of both wrists and proximal-metacarpal regions, and of some of the interphalangeal joints, and of both elbows (about the head of the radius). The right knee-joint (the other one is at present in plaster) is slightly puffy, and so are both ankles and the dorsal regions of the feet. The ribs are "beaded." The spleen is evidently (by percussion) enlarged, though the edge cannot at present be felt. The liver is apparently not enlarged. The cardiac apex beat is felt in the fifth intercostal space, half an inch outside the nipple line; the heart's action is forcible, but, as already stated, no murmur indicative of valvular disease can at present be detected. Of the superficial lymphatic glands the axillary ones are those chiefly enlarged, but they are discrete, and none of them are larger than about the size of a hazel-nut. There is practically no stiffness of the neck or vertebral column. Examination of the blood shows the presence of slight anæmia. The urine is free from sugar and albumin. In the way of drugs the boy has been taking iodide of iron.

In February, 1908, Calmette's "ophthalmo-reaction" for tuberculosis (1 per cent. fluid as recommended by Calmette) gave a completely negative result, though von Pirquet's "cuti-reaction" for tuberculosis (vaccination on the forearm with Koch's old tuberculin—25 per cent.) gave a positive result.

This positive "cuti-reaction" is interesting. In a girl, aged 12½ years, with chronic joint disease of somewhat similar type to that in the case of Arthur S—, I once obtained a positive general reaction by the subcutaneous injection of Koch's old tuberculin for diagnostic purposes.* After the injection of 5 mgrm. her temperature rose to 101° F., but the general febrile reaction appeared not to be accompanied by any local reaction in the joints, and it is quite possible that somewhere in this girl's body a latent tuberculous focus existed, which had no connection with the chronic joint disease. Anyhow, in Arthur S—, even if the positive "cuti-reaction" be accepted as indicative of the presence of some latent tuberculous lesion, I think it very unlikely that the arthritic trouble has any direct connection with it. I may mention that there certainly is nothing in the case to suggest a congenital syphilitic origin for the joint disease. That there is a rachitic element in the case must be admitted (the boy's ribs are at present markedly beaded, though he is ten and a half years old), but whether the rickets can be causally connected with the polyarticular disease is doubtful. The development of the mitral valve lesion in 1901 may be taken as probably pointing to the presence at that time of actual rheumatism.† The articular affection, however, in the present case, as in other examples of Still's type of chronic joint disease in children, differs from true articular rheumatism by the relative absence of pain and tenderness and by the chronic relapsing course of the disease.

In connection with the present case it is also interesting to find that Rupert Waterhouse, in his investigations as to the state of the lymphatic glands in rheumatoid arthritis ('St. Bartholomew's Hospital Reports,' London, 1907, vol. xxx, p. 107), has come to the conclusion that enlargement, moderate in degree, of the superficial lymphatic glands is almost always present in polyarticular rheumatoid arthritis of the type that commonly attacks young women, when the affection has lasted more than a few months. He maintains that glandular enlargement can no longer be considered a distinctive feature of Still's type of joint disease in children.

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* See description of the case in the BRITISH JOURNAL OF CHILDREN'S DISEASES, *loc. cit.* (second case described).

† F. J. Poynton has recently described the case of a boy, aged 4½ years, suffering from a chronic joint affection of a type similar to that described by Still, but associated with obvious valvular disease of the heart ('Edinburgh Medical Journal,' September, 1907, p. 232.)

ADDENDUM (APRIL THE 22ND, 1908).

Mr. Eric Alven, who is at present kindly treating the boy by massage and passive movements, points out to me that, however free from spontaneous pains the patient may be, he is by no means as free from tenderness on manipulations of the limbs as I had thought he was. In regard to the possible connection of joint-disease of Still's type in some instances with tuberculosis, E. N. Cunliffe ('Medical Chronicle,' Manchester, March, 1908, p. 453) has recently described the interesting case of a girl, aged 11 years, in whom he thought that the evidence of the presence of tuberculosis was fairly convincing.

A CASE OF OSTEOGENESIS IMPERFECTA.*

By F. LANGMEAD, M.D.Lond., M.R.C.P.,
Physician to Out-Patients at Paddington Green Children's Hospital.

J. E—, a male infant, now aged 33 days, was brought to the Paddington Green Children's Hospital when he was four days old, because the limbs had been noticed to be bent at birth and were painful when moved. His birth was eventful. The mother believing herself to be about seven and a half months pregnant, and unaware of the onset of labour, was bathing other children in the kitchen when she felt a severe labour pain, and almost directly the head at the vulvar orifice. She held it back with her hand and got quickly to bed, where immediately the child and after-birth were expelled. It was soon noticed that the child's legs and arms were crumpled up, and for this it was brought to the hospital.

Family history.—The father and mother are quite well. There are nine other children also well. No miscarriages. No history pointing to syphilis. When examined at the hospital it was at once evident that he was strikingly and symmetrically deformed. The legs are sharply bent, almost to a right angle, a little below the middle of the bones, and the thighs, a little above the middles of the femora. Both forearms are bent about midway from elbows to wrists. The humeri are also slightly curved. In some places definite amniotic dimples can be seen. There are two in front of the bend in the left leg, one on the external and one on the internal aspect of the limb, and two more in the right lower extremity, one on the outer aspect of the bend in the leg and one on the posterior aspect of the junction of the upper and middle thirds of the thigh. The post-anal dimple is well defined. The skull is imperfectly ossified, especially about the lambdoid suture on the right side, where the bone is little more than membrane. A skiagram taken on the day of admission showed conclusively that the bending of the leg bones was due to fractures, and other skiagrams subsequently showed that this was true also of the arms, excepting the left radius

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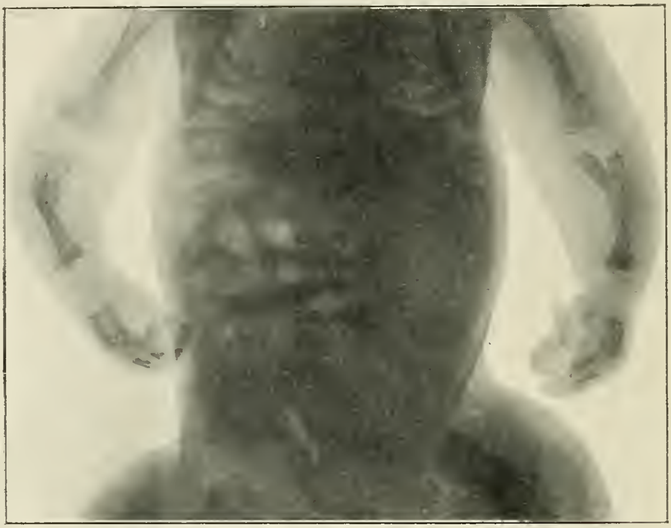
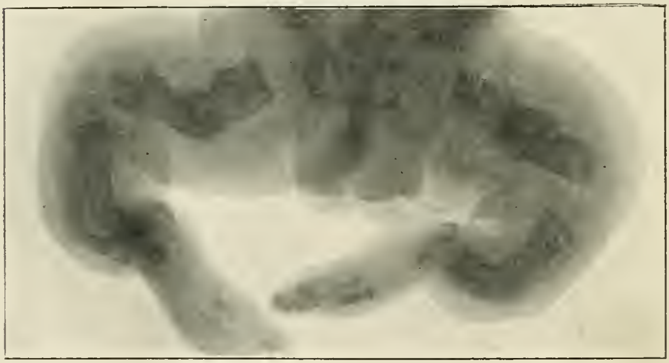
* Exhibited at The Society for the Study of Disease in Children, October the 18th, 1907.





and ulna, which are merely curved. There are fractures of both tibiæ and fibulæ, of each femur in two places, of the right humerus and of the right radius and ulna, eleven in all, and bending of the left radius and ulna. About some of the fractures there is very marked callus formation, especially about those of the femora and leg bones. The fracture of the right humerus is evidently recent. The shadow given by the bones is no less dense than normal. The patient is a healthy-looking baby, and apart from the multiple fractures is apparently in normal health. His hair, however, is somewhat wiglike.

There can be no doubt that the fractures were intra-uterine, since the skiagram taken a few days after birth shows a considerable amount of callus, and the presence of amniotic dimples affords additional conclusive proof.

THE AURAL MANIFESTATIONS OF INHERITED SYPHILIS.

By Macleod Yearsley, F.R.C.S.,
Senior Surgeon to the Royal Ear Hospital, etc.

No symposium upon the manifestations of inherited syphilis would be complete without mention of the grave disturbances to which it may give rise in the organ of hearing, complications which, unless treated promptly, may lead to total deafness. The serious nature of these conditions has been very clearly put by Hutchinson in the following words: "We know of no form of ear disease other than that due to syphilis in which, without any obvious destruction of parts, complete permanent deafness in both ears can be brought about in the course of a few weeks. But this is not a rare occurrence in the subjects of inherited syphilis."

The disease, as is well known, attacks females more often than males. Hutchinson and Purves (1) have stated that of those who suffer from inherited syphilis two thirds are females. Of 541 aural out-patients in one year at King's College Hospital, 11 suffered from inherited syphilis, and of these there were 9 females and 2 males. Of the cases which have come under my own notice during the past ten years 13 were males and 19 were females.

According to Hutchinson, the ears are affected in 10 per cent. of all cases of inherited syphilis, but Hermet and Baratoux estimate the ear complications at the much higher figure of one third of all cases. The latter calculation is probably more accurate because it takes account of the cases which, occurring in early infancy, do not come to the notice of the surgeon. Baratoux examined a number of new-born syphilitic infants and found numerous alterations in the ears, the chief being purulent middle-ear inflammation, thickening of the tympanic membrane, adhesions of the membrane to the promontory, hyperæmia, hæmorrhages, and accumulations of pus in the labyrinth, and destruction of the organ of Corti.

Catarrhal and suppurative middle-ear inflammations may occur in inherited syphilitics; they do not, as a rule, differ from those affecting normal children, but it is important that their nature should be recognised in order that specific treatment may be carried out, otherwise they will prove progressively destructive. The most important aural complications are, however, those affecting the labyrinth, and it is to these that I propose to devote attention in this paper.

The labyrinth may be attacked in two ways, the pathological findings being different in each group. Thus all cases of inherited syphilitic disease of the labyrinth fall into one of two groups—those in which the onset is unaccompanied by vertigo, and those in which that symptom is a marked feature.

Let us take the former cases—those without vertigo—first. In this class the history is usually one of gradually increasing deafness, one ear being affected first, followed sooner or later by the other. The eye symptoms generally precede the aural condition closely, but there may be a considerable interval of time between them, and the deafness may be antecedent to the eye affection. In my own 32 cases the eye symptoms appeared first in 14, at the same time as the deafness in 6, after the ear symptoms in 4, whilst the relation was doubtful in 8. In the 14 cases in which the eye symptoms appeared first, their antecedence varied from fourteen days to "many years," whilst in the 4 cases in which the eyes were involved later than the ears, the lapse of time ranged between two and three and a half years.

As a rule the stigmata of inherited syphilis are well marked, making diagnosis easy, but should they be absent, recognition of the condition must rest upon the fact of an insidious internal ear deafness coming on between the ages of eight and twenty-five, all other possible causes being excluded. Such cases are, however, rare. Everyone of my 32 cases were accompanied by inherited specific eye affections (all had interstitial keratitis, one choroiditis). As regards the teeth, they were typically Hutchinsonian in 9, suspicious in 11, and presented nothing characteristic in 12.

The pathological conditions found in inherited syphilis of the labyrinth coming on without vertigo consist chiefly in a chronic osteitis, leading to gradual, more or less complete, occlusion of the cavities of the internal auditory meatus and bony labyrinth. A typical and instructive instance of this class of case, specially valuable as completed by post-mortem examination, has been described by Walker Downie (2):—

A boy, aged 17 years, had been deaf for six years, following an interstitial keratitis. Both ears became totally deaf in six months. He was totally deaf to the voice, tuning-fork, and a loud bell. He was treated with gray powder and mercurial inunctions, and in six months could hear the tuning-fork by bone-conduction one fourth of the normal time. He died shortly after from a cerebral gumma.

The autopsy revealed the middle ear healthy, except for ankylosis of the foot-plate of the stapes in the fenestra ovalis. The inner extremity of the internal meatus was of average normal calibre, but 1 cm. from the inner opening the superior wall suddenly thickened, encroaching upon the canal, and at a further distance of 3 mm. the canal was almost entirely obliterated. The vestibule was greatly encroached upon, and the cochlea, modiolus, and lamina spiralis ossea were so thickened as to occupy an unusually large proportion of the cochlear cavity. Only a trace of the external semi-circular canal was recognisable, the rest of the labyrinth being lost in a mass of dense ivory-like bone.

The symptoms and the pathological findings in this group of cases resemble those met with in the tertiary form of the acquired disease. The osseous growth which takes place does so from the peri- and endosteum, and is due to a specific inflammation of the lining of the labyrinth. It is possible that in these cases the inherited disease runs a true tertiary form. That inherited syphilis may assume a typically tertiary form, as seen in the acquired disease, is known, and is amply shown by the ulceration of the throat not infrequently met with in inherited syphilitic children.

The second group of cases is uncommon. In them vertigo is a marked symptom. Such cases may run an acute, subacute, or chronic course. Kipp, quoted by Politzer, collected a number of cases in which inherited syphilis was combined with disturbances of hearing, interstitial keratitis, and, in one case, with syphilitic iritis, the symptoms being sudden deafness, vertigo, disturbances of equilibrium, tinnitus, post-nasal catarrh, and occasionally middle-ear catarrh. In my 32 cases only 4 suffered from vertigo, and in these the deafness appeared at the ages of 50, 16, 30, and 16 years respectively.

It has been suggested that an exudation into the labyrinth occurs, corresponding to that which is present in syphilitic iritis, but this has not been proved. Such a lesion certainly happens in the acquired disease, and a typical case has been recorded by Moos(3). The symptoms, moreover, are best accounted for by an increase of tension due to exudation. In those forms that are acute in onset the deafness is due to an immediate destruction of the labyrinthine nerve-endings by pressure alone; in such cases the prognosis is worse than in those which run a subacute or chronic course, in which the symptoms are due rather to a constantly recurring increase of tension, and to changes in the exudation itself acting on the labyrinthine nerve-endings. This group has its counterpart in the aural manifestations of the secondary acquired disease.

The labyrinth is usually attacked by inherited syphilis between the ages of eight and twenty-five years, although the ear may be affected *in utero*, or as late as twenty-eight or even thirty years. I have published (4) one interesting case in which the complication did not appear until the age of fifty years. As a general rule the ear troubles follow the eye symptoms, but, as I have already pointed out, there are exceptions to this rule. The following remarkable case (5), in which the deafness came on slowly, with vertigo, some ten months before the appearance of keratitis, is an example. The history is so exceptional that it is worth repeating:

A boy, aged 11 years, was attacked in August, 1896, with frontal headache, giddiness, and occasional vomiting, especially on getting up in the morning. The attacks continued until December, when he was first brought to the hospital. There was right humming tinnitus and gradually increasing deafness. He frequently staggered, often towards the left, and frequently fell, generally forwards. The boy stated that there was apparent movement of surrounding objects, most frequently from left to right.

The membranes were depressed, the nose and naso-pharynx normal. The stigmata of inherited syphilis were absent, but the boy's father had had a badly ulcerated throat. The mother and other children were healthy. Vertigo could be elicited by turning the head sharply to the left. The tuning-fork on the vertex was heard only on the left side.

On treatment (by blistering behind the ears and the administration of dilute hydrobromic acid) the vertigo improved, but the hearing became worse. In May, 1897, interstitial keratitis appeared, demonstrating the true nature of the case.

The relation between inherited syphilis and deaf-mutism does not appear to have been very clearly made out. Hahn (6) has said that it may cause deaf-mutism, either by closure of the Eustachian tubes or by directly attacking the middle ear, labyrinth, or auditory centre. When the middle ear is selected, the entire hearing apparatus may be destroyed by purulent processes if treatment is not vigorously prosecuted. When the lesion affects the labyrinth or auditory centre no lesion is discoverable during life.

No doubt the fact that the ears are not usually attacked before the age of eight years, that is, after the acquisition of speech, accounts for its rarity as a cause of deaf-mutism, but judging by the statement of Baratoux, already referred to, one would expect to find inherited syphilis in an appreciable percentage of deaf-mute cases. Mygind (7) has described cases of deafness due to the condition as early as the age of four years, and considers that it may be a very definite factor in deaf-mutism, but remarks (8) that the fact that inherited syphilis may cause deafness without other specific stigmata, and that the extreme difficulty of discovering syphilis in the parents, especially by means of questions alone, may explain why the disease so seldom appears in deaf-mute statistics.

Kerr Love (9), on the contrary, thinks it cannot be expected that syphilis will figure largely in returns furnished through the medium of institutions. He mentions that at the Glasgow Institution, out of 127 children, only three cases of typically Hutchinsonian teeth could be found. He admits (10) that post-mortem evidence of the effects of syphilis in producing deaf-mutism is not wanting, but that the true cause of the deafness is seldom given in such cases.

In the London County Council Deaf Schools, under my charge, out of 627 children I have so far traced only nine cases of undoubted inherited syphilitic deafness. In these the deafness appeared about the age of three years in two cases, about four in two cases, about ten in one case; one case was said to have been "born deaf," the remaining three cases being doubtful. All had signs of interstitial keratitis; the teeth were typically Hutchinsonian in three, suspicious in three, and showing no tendency to any special character in three.

Moos and Steinbrügge (11) have given the results of the autopsies of three deaf-mutes, the changes in whose temporal bones correspond to the pathological findings described in our first class of cases.

Considering the fact that the ears may be attacked *in utero*, it is very possible that a certain number of the cases of deaf-mutism who are described as "born deaf" may owe their condition to inherited syphilis.

I now pass on to the question of treatment. It will be obvious to the reader that the ordinary treatment of inherited syphilis does not appear to have much effect upon the ear condition, since, although it may be vigorously pursued when dealing with the eye troubles, it does not seem to prevent the later onset of the deafness. Moreover, I have met with more than one case which, having entered an ophthalmic hospital for the treatment of interstitial keratitis, has been attacked by deafness during the period of treatment, and has left the institution deaf. In looking through the notes of the thirty-two cases already referred to, I find that in fifteen, specific treatment, even when commenced as soon as the aural condition had become manifest, was without effect. In one case (a man, aged 38 years, with discharge and deafness, bone-conduction being greatly impaired, old iritis and keratitis), iodide treatment effected a slight improvement. It has been pointed out by one observer that, in all the cases which become deaf from inherited syphilis specific treatment has been neglected during infancy, which suggests that, to be of any use, such means must be resorted to more from the point of view of prophylaxis than of cure. I have found also that in many cases of deafness due to the acquired disease specific treatment is equally disappointing, except in those in which the middle ear is the part implicated.

We must, therefore, turn to some other remedy for help. Fortunately, in labyrinthine deafness due to acquired syphilis, pilocarpine is a very valuable agent, provided it is employed early in the condition. It is equally useful, with the same proviso, in inherited syphilis of the labyrinth. I have had the opportunity of using pilocarpine in three cases only. In the first case the deafness had only existed for some ten or fourteen days, but bone-conduction to the C (128) fork was *nil.* Pilocarpine was given by injection and resulted in improvement in three days, the bone-conduction being regained 50 per cent. in a fortnight. The second case, recently under my care, was minutely tested, and I give the notes in full :

E. D—, aged 11 years, was sent to me by Mr. H. B. Grimsdale, under whose care she had been at the Royal Westminster Ophthalmic Hospital for interstitial keratitis. She had been getting deaf for two months, the right ear being the first attacked. She had no vertigo, but complained of hissing tinnitus. The eye symptoms preceded the deafness by about a fortnight. Tests gave the following results : Acoumeter, R., 0, L., 1 in. ; voice, R., 2 in., L., 5 in. ; whisper, both ears, 0. Rinné, both ears positive to C (128) fork. Bone-conduction to C (128), both ears, – 27 sec. ; Galton whistle, R., 0, L., 23,000 vibrations. By air-conduction, 3 C (16), C_2 (512), and C_3 (1024) were not heard on the right side. On the left side 3 C (16) and C_3 (1024) were not heard. C^4 (2048) was heard, R., – 35 sec., and L., – 31 sec.

She was at once placed upon pilocarpine injections, commencing with gr. $\frac{1}{12}$, increasing to gr. $\frac{1}{5}$, daily. Blisters were applied over the mastoids, and the specific treatment administered at the eye hospital was continued. There was distinct improvement in a week, and at the end of a fortnight her tests were: Acoumeter, R., 9½ in., L., 10½ in.; voice, R., 10 in., L. 3 ft. 6 in.; whisper, R., 0, L., 3 in. Bone-conduction, C (128), R., – 16 sec., L., – 10 sec. Galton whistle, R., 0, L., 3200 vibrations.

In the third case pilocarpine was employed too late to be of service.

When treatment by pilocarpine or by specific remedies does not have any effect, Politzer recommends the use of iodide or sulphur baths.

References.

(1) 'Archives of Surgery,' July, 1897.
(2) 'Archives of Otology,' xxv, 37.
(3) 'Virchow's Archiv,' lx, 313.
(4) 'The Polyclinic,' August, 1907.
(5) 'King's College Hospital Reports,' vol. iv, "Report of the Aural Department."
(6) 'Deutsche medicinische Wochenschrift,' December 1st, 1898.
(7) 'Nordiskt Med. Arkiv.,' xxii, No. 7, 1890.
(8) 'Deaf-Mutism,' London, 1894, p. 128.
(9) 'Deaf-Mutism,' Glasgow, 1896, p. 145.
(10) *Ibid.*, p. 172.
(11) 'Archives of Otology,' xv, 123.

WEAK NERVOUS CHILDREN AND ARSENIC.

By Dr. E. F. Christin,

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Last year, thanks to the courtesy of the Editor of this Journal, I had the pleasure of communicating an article on the treatment of chronic coryza in children by La Bourboule water—arsenical and chlorinated (arsenate of soda 0·028 mgrm. per litre = xxi drops of Fowler's solution, chloride of soda 2 gr. 84 per litre). I need not expatiate on the beneficial influence of a mineral water so well known to dermatologists in the treatment of psoriasis and eczema and generally recognised as beneficial in lung troubles and disorders of the upper air-passages. I will limit my remarks to explaining the influence of the cure by arsenic and high altitude (2400 ft.) on rickety and nervous children.

Though nearly all writers nowadays agree that scrofula should not be considered a definite disease, the term "scrofula" remains in use. What do we mean by a diagnosis of scrofula in a child? We only wish to describe a common condition in certain cases—to indicate a peculiar habit of body favourable to the development of numerous pathogenic microbes, and particularly of the tubercle bacillus.

How can one clearly define scrofula when experimental and bacteriological research give no certain indication, and when neither physically nor chemically can the causes of this disease be ascertained?

Clinically, we are able to recognise this bodily decay, this weakness of constitution, which renders its victims an easy prey to all manner of diseases.

From the very earliest age the child suffering from scrofula has a characteristic appearance: the face is pale and puffy, the cellular tissue soft and infiltrated, the mucous membrane of the nose swollen, and generally issuing from it are secretions similar to those of coryza; the tonsils prominent and swollen, the head too large in proportion to body and limbs—in short, an entire want of harmonious development of the different parts of the body decides us at the first glance to ascribe it to this kind of abnormality.

Finally, as Dr. Paul Gaston* says, "The most obvious and frequent symptom is lymphatic infection of the glands characterised, clinically, by enlargement of the lymphatic glands of the neck."

If we inquire into the family history we usually find a pathological or physiological hereditary taint: old age, alcoholism, overstrain, want, anæmia, chlorosis, tuberculosis or syphilis will be at the bottom of this ill-omened inheritance.

It is true that sometimes we may not find a determining cause in the parents for the morbid condition of the child; close inquiry will then probably reveal a history of trouble in infancy—mal-nutrition, diarrhæa, constipation, faulty hygiene, insanitary surroundings, and unsuitable clothing.

Indeed, I do not think scrofula should always be attributed to heredity; it may occur in a child born of healthy parents, though in most cases an hereditary taint is found.

In addition to this type of the disorder there is another, the symptoms of which, though perhaps less serious, cannot be disregarded. I refer to the weakly, neglected children brought up in large towns in dark and close surroundings, whom Professor Landouzy † refers to as follows: "Puny children with narrow frames, small and thin, of loose build, with fine soft skin, and the cervical spine for its whole length covered with down, with shining eyes, long lashes, thick lips, slender limbs, long fingers, pale faces, transparent veins, and with glands easily susceptible to infection—a whole legion in the army of the degenerate."

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* Dr. P. Gaston, "La Scrofule," 'Revue d'hygiène et médicine infantiles,' Paris, 1904.

† Landouzy, 'Revue de médecine,' Paris, 1900.

This type fall an easy prey to tuberculosis and the invasion of pathogenic microbes, if we are not able to check their physical downfall.

What should we do to remedy these morbid conditions when we have recognised and diagnosed them? Two courses are open to the practitioner: sea air and climatic treatment on the one hand, and the arsenical cure and high altitude on the other. Treatment at the seaside, as carried out in sanatoria at Berck or Hendaye, has already an established reputation, and I personally saw great improvement in the condition of the little patients after a sojourn at the seaside when I was Professor Jalaguier's dresser at the Enfants-Assistés Hospital, Paris.

But sea air is not a treatment suitable for all scrofulous children. Quite a number of such patients, instead of deriving benefit from a visit to the sea return more jaded and debilitated. I refer to those weak and nervous children for whom sea air is too stimulating after two or three days.

The child soon becomes sulky and fractious, or cries without cause; he has disturbed nights and sleeps badly, and eats little; in addition facial neuralgia occurs in some cases, and sometimes even disturbances of sight and hearing.

Dr. Maurel* says that La Bourboule is peculiarly suited to children who require treatment by chloride of sodium, and whom the sea does not suit; nervous children who become restless and sleepless at the seaside, who have sensitive skins and adenoid growths, disease of the tracheo-bronchial glands, and a tendency to bronchitis—all affections which are rarely improved and very often aggravated by sea air.

The two following cases will support this brief statement:

Case 1.—X—, from Paris, a little girl, aged 7½ years, has never had any regular illness, only slight colds once or twice.

No hereditary taint.

In infancy her wet-nurse was changed several times, which upset her digestion. She sleeps badly, refuses food, is sad and pale and is not getting on in spite of care.

About June the 20th she was sent to the seaside. When she had been there a few days she became more excitable, did not sleep at all, and had intermittent neuralgia of the labial commissure with facial spasm on the left side. The practitioner looking after the case recommended mountain air, and on July the 1st she arrived at La Bourboule. Her height was then 3 ft. 8 in., and she weighed 2 st. 10 lb.

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* 'Gazette des maladies infantiles,' Paris, 1902.

First week, July the 1st to the 8th.—Each morning a bath of a temperature of 36° F., lasting fifteen minutes, followed by rubbing with alcohol, an hour's rest in bed, a drink of 50 gr. of La Bourboule water half an hour before the midday and evening meals.

Height, 3 ft. 8 in. Weight, 2 st. 11 lb.

Second week, July the 8th to the 15th.—Slight change of treatment: A half-bath alternate days with a shower bath; a drink of 75 gr. in the morning, 50 gr. in the evening.

Height the same. Weight 2 st. 12 lb.

Third week, July the 15th to the 22nd.—The same treatment. Drink, 75 gr. morning and evening.

Height about the same, 3 ft. 8 in. Weight, 2 st. 13 lb.

July the 28th.—Day of departure; weight has gone up still more.

Throughout the whole course of the treatment the child has been out for walks from 9 to 11, and in the afternoon going up to the Charlannes (1·300 m.) after her afternoon sleep from 3 to 6.

Case 2.—C—, boy, aged 6 years.

He has had the usual infantile maladies, whooping-cough, measles, but not severely; urine normal. Father healthy; mother very anæmic and nervous.

He was slender-framed and narrow, with a thin, colourless nasal discharge; he had had adenoids removed two months previously.

The child had just spent three weeks at the sea, at Royan. He was nervous, cross, and slept badly, his appetite was bad, and when he was taken out for a walk he continually asked to be carried.

He came to La Bourboule on July the 25th.

Height 3 ft. 2 in. Weight 2 st. 4 lb.

From July the 25th to August the 1st.—Baths at a temperature of 36° F. increasing in duration from ten to fifteen minutes, followed by rubbing with alcohol and rest in bed. Walks in the mountains, La Bourboule water, 40 gr. half an hour before the midday and evening meals.

Height 3 ft. 2 in. Weight 2 st. 4 lb.

From August the 1st to the 8th.—The same treatment continued. A drink of 50 gr. The boy is livelier and likes to play, sleeps better, and eats better. Nasal discharge has ceased.

Height 3 ft. 2 in. Weight 2 st. 6 lb.

From August the 15th to the 22nd.—The same treatment continued. A half-bath every day.

Height the same. Weight 2 st. 7 lb.

From August the 22nd to the 29th.—No more baths. Half-strength douches every day.

Height 3 ft. 2½ in. Weight 2 st. 7 lb.

Neither of these cases could have borne the sea-air treatment longer, and both derived the greatest benefit from their visit to La Bourboule, and were considerably improved in condition by the arsenical treatment and high altitude.

It is true that the duration of their treatment was rather longer than the empiric period of twenty-one days usually devoted to thermo-therapy, but at the end of the first fortnight the beneficial effects of the arsenic and the mountains were evident.

The Society for the Study of Disease in Children.

A MEETING was held on Friday, April the 10th, 1908, at No. 11, Chandos Street, W., Dr. E. HOBHOUSE (Brighton) in the chair.

A Paper on a Case of Henoch's Purpura associated with Intussusception was read by Mr. HUGH LETT. The patient, a child, aged 3 years, was quite well until two days before his admission into hospital. He then had pain and swelling of the left knee and elbow. The next day both legs were swollen, and he had severe paroxysms of abdominal pain. The same afternoon two purpuric spots were seen on the left leg. He was admitted the following morning, and a cæcal intussusception operated upon and reduced. The purpura steadily became worse, and he finally died from a second intussusception of the enteric variety nine days after the first operation. Mr. Lett drew attention to the difficulty often met with in diagnosing between intussusception and Henoch's purpura when the abdominal symptoms appeared before the onset of any cutaneous lesions, and also to the difficulty in many cases of undoubted Henoch's purpura of deciding whether an intussusception were present or not. After a survey of the literature, he indicated the main points in the differential diagnosis between the two conditions, and laid stress on the importance of determining the presence of a tumour before making a diagnosis of intussusception.

Dr. G. A. SUTHERLAND thought there was a special form of gastro-intestinal hæmorrhage associated with Henoch's purpura. All the signs of intussusception might be present, with the exception, perhaps, of a palpable tumour. Further, he, like the reader of the paper, had had experience of the occurrence of intussusception in Henoch's purpura. He thought that the diagnosis of spontaneous reduction, made sometimes after the abdomen had been opened, might be reserved for those cases in which no evidence of hæmorrhage was present. For if hæmorrhage was present he should regard it as a sufficient explanation of the symptoms.

Mr. Duncan Fitzwilliams said that the presence of a tumour settled the diagnosis in practically every case, though he had seen one case where the tumour was caused by a blood-clot in the cæcum. He thought that it was possible to recognise the presence of a tumour in 85 to 90 per cent. of cases in infants if careful examination were made under an anæsthetic. He alluded to the fact that the wounds often did not heal kindly in cases of purpura, and knew of one case which died of hæmorrhage from the wound, treatment being of no avail.

A Paper on a Case of Tetanus Neonatorum was read by Dr. J. Porter Parkinson. The patient, an infant, aged 2 weeks, had been ill for four days. The mother had had several other children, and one had died when six days old from "lock-jaw"; he was unable to take the breast, and was said to have had similar symptoms. On admission into hospital there were general rigidity and opisthotonos, also a well-marked risus sardonicus.

The umbilicus looked unhealthy and discharged a thin, sticky fluid. The child improved, but died suddenly from asphyxia seventeen days after admission. It was discovered that the mother had treated the umbilical wound with Fuller's earth, and it was suggested that this might have been the cause of infection both in this child and also in the previous child who had died from tetanus. Dr. Parkinson drew attention to the prevalence of this practice, and to the fact that this possible source of tetanus was well recognised by coroners. He thought that the knowledge of this should be more widespread.

Dr. Edmund Cautley thought that a more common cause of the condition was brown paper, which was not infrequently used. He asked what treatment Dr. Parkinson had given. Chloral used freely might give good results and could be combined with bromides; it should be given by the rectum.

Dr. George Carpenter alluded to two cases which had been under his care. In both cases anti-tetanic serum was injected subcutaneously, and in both cases chloral and bromides were given, but without success. In each case Fuller's earth had been applied to the cord. In one there was a muco-purulent discharge from the navel, but in the other it was apparently normal.

A Member said that he had a large practice among the poorer classes, and Fuller's earth was used by probably 95 per cent. of mothers. To attribute the disease to that was, he thought, casting an undeserved reflection on the preparation.

A Case illustrating Eustace Smith's Bruit was shown by Dr. Leonard Guthrie. The patient was a boy, aged 7 years. The superficial veins were enlarged over the front of the chest. On auscultation an undulating musical venous bruit could be heard at the base of the heart, occupying the whole of the cardiac cycle. The bruit was intensified and the venous engorgement became more pronounced when the head was retracted. The condition was probably due to pressure of enlarged mediastinal glands on the innominate vein, or superior vena cava.

A Case with Eustace Smith's Bruit was also shown by Dr. Langmead. The patient, a girl, aged $5\frac{1}{2}$ years, had whooping-cough in April, 1907. Since then she had had frequent coughs which were neither laryngeal nor paroxysmal. There was some impairment of note in the interscapular region on the right side. To the right of the manubrium sterni a definite to-and-fro rushing murmur was heard when the head was retracted, but it was lost when the head was flexed.

Dr. Edmund Cautley thought that the murmur was of very little value apart from the physical signs, notably dulness and dilated veins. It was important to decide on the value of the murmur. He had seen many children with that murmur who had not developed signs of tuberculous glands locally; some of them had been under observation for years.

Dr. Porter Parkinson agreed with Dr. Cautley, and knew of many similar cases. Mediastinal glands might be present without any signs pointing to their existence.

Dr. F. W. Higgs asked whether it was usual to find venous obstruction in the case of tuberculous glands, and suggested the possibility of the lesion in this case being new growth.

Dr. George Carpenter did not attach any special importance to Eustace Smith's murmur. He had met with it in four different types of cases: (1) In pericarditis with mediastinitis; (2) in sarcoma of the mediastinum; (3) in tuberculous growth in the mediastinum; (4) in abscess of the thymus. In the case of tuberculous growth in the mediastinum, œdema of the left hand and arm developed, and post mortem it was found to be due to blocking of the corresponding innominate vein.

Dr. Guthrie, in reply, said he thought he could diagnose the condition by other physical signs, namely, diminution of resonance to the right of the sternum in the second and third spaces, and by the character of the breath-sounds. The breath-sounds were almost tracheal in character, and were heard behind as well as in front. Spasmodic cough was a very prominent symptom, and was frequently regarded as whooping-cough.

A Case of Aortic Regurgitation in a Boy, aged 4 years, was shown by Dr. Porter Parkinson. He was brought to the hospital for fainting fits. There was no history of rheumatism or other acute specific fever. The cardiac impulse was in the fifth space just outside the nipple line. There was a well-marked diastolic murmur at the base of the heart, best heard on the left side, and conducted down the sternum. The pulse was regular and collapsing. Capillary pulsation was well marked.

A Case of Recovery from Encephalitis in a Girl, aged 1 year and 8 months, was shown by Dr. George Carpenter. Three weeks before the onset of the attack she had had measles. When admitted to hospital she had screaming fits, double optic neuritis, and squint; the temperature was subnormal. Lumbar puncture was followed by an abundant flow of fluid, which was sterile, and contained no cellular elements. She ultimately recovered completely, except that she was, perhaps, not so bright as she had been before the illness. The optic neuritis disappeared.

The Chairman (Dr. Edmund Hobhouse) (Brighton) said that lumbar puncture was of interest in such cases. It was frequently performed for suspected meningitis, and the symptoms disappeared. In one case in which there was marked retraction of the head the condition cleared up. It followed pneumonia, and pneumococci were found in the fluid.

A Case of Hypospadias was shown by Mr. Hamilton Burt.

The Heart of a Child, aged 7 years, with Infective Endocarditis of the Pulmonary Valves probably Supervening on Congenital Disease, was shown by the Chairman (Dr. Edmund Hobhouse) (Brighton). As the result of ulceration there was a communication with the aorta. In life there had been a very loud, harsh, and almost continuous bruit.

The Stomach of a Child, aged 3½ years, who had died from Tetany, was also shown by the Chairman (Dr. Edmund Hobhouse) (Brighton). The stomach was very small, and there was no dilatation of the colon.

Specimens from a Case of Bilateral Renal Apoplexy were shown by Dr. Edmund Cautley. The patient, a boy, aged 3 months, died after an illness of two days' duration, characterised by convulsive movements and unconsciousness. There was no apparent cause for the condition.

A Specimen from a Case of Congenital Morbus Cordis was shown by Dr. George Carpenter. The right auricle was large and fleshy, the left was small and membranous, the whole making a single chamber without a trace of a septum. A large valve of two single flaps separated the auricle from the ventricles. The ventricular septum was imperfect. The arch of the aorta passed over the right bronchus, and a small patent ductus arteriosus passed round the trachea.

A Specimen and Skiagram of a Case of Traumatic Separation of the Lower Epiphysis of the Femur in a Lad, aged 14 years, was shown by Mr. John Poland. The diaphysis was displaced outwards and backwards without injury to the popliteal vessels. The specimen showed the appearances at the end of thirty-eight days after the injury. The new bone deposited between the displaced epiphysis and stripped-up periosteum in front of the diaphysis was particularly to be noted.

Philadelphia Pediatric Society.

Stated Meeting, Tuesday, April the 14th, 1908, J. P. Crozer Griffith, M.D., President.

Two Cases of Chorea treated at the Children's Hospital in the service of Dr. Griffith were reported by Dr. Isaac H. Jones. The first case showed the symptoms characteristic of severe chorea. The movements involved every part of the body, including the diaphragm. Speech was lost and feeding accomplished with difficulty. This case was reported to show the rapid and satisfactory results from the administration of hyoscine hydrobromate hypodermically in doses of gr. $\frac{1}{200}$, gr. $\frac{1}{150}$, gr. $\frac{1}{100}$, after bromides had proved unsatisfactory. The second case also had characteristic symptoms of severe chorea. The fact that the patient was a coloured girl, aged 7 years, was interesting, as chorea in the negro race is rare. Her mother was a full blooded negress, born in Rhode Island. Her father's mother was an Indian squaw, whose father was a white man. The father's father was a Frenchman.

Dr. Griffith said that the first case had been under his care and no words could well describe the violence of the movements. It was interesting to watch the excessively irregular movements of the diaphragm as well as the difficulty which the child experienced in taking any food. The case was also an illustration of the value of hyoscine in this condition. He had seen but one severer instance of the disease, a fatal case which he reported a few years ago. With regard to the other child, Dr. Griffith asked whether anyone had seen chorea in coloured children. It appeared to be distinctly uncommon.

Dr. S. M. Hamill could not recall a case of chorea in a negro.

Dr. Jones stated that he could find only three cases of chorea in coloured children among the records.of the Children's Hospital for the last fourteen years.

Dr. Arthur Newlin had seen two cases of chorea in coloured children in the past year, one at the Pennsylvania Hospital and the other at the Orthopædic Hospital in the service of Dr. Lewis. White blood was always to be found among the ancestors of these children.

Three patients with Valvular Heart Disease, none of whom had had Rheumatism, were exhibited by Dr. Alfred Hand, Jun. The first was a boy, aged 12 years, who had chorea several years before and had since been troubled with palpitation. On the day before admission into the hospital of the Drexel Home he was seized with pain in the abdomen and walked bent over, with the right thigh flexed; fever and abdominal tenderness developed and he was sent in with the diagnosis of appendicitis. On admission the abdomen was negative except for slight tenderness on the left side. The heart was tumultuous in its action and the murmurs heard were systolic at the aortic cartilage, transmitted into the carotids; diastolic at the same point, transmitted down the sternum, and soft, systolic, at the apex (secondary ?), transmitted toward the axilla. The radial pulse was decidedly water-hammer, and the capillary pulse was so striking that it could be seen at a distance in each finger-nail when the fingers were held widely apart. Salicylates controlled the initial fever and the two relapses which occurred after the drug had been stopped. While the incompetency of the aortic valves was the most marked feature at the start there seems to be a gradual evolution progressing, and the stenosis is now more prominent, the thrill in the carotids being stronger, the diastolic murmur less pronounced, and the capillary pulse more difficult of demonstration. The X-ray plate, which was taken by Mr. Wilbert, of the German Hospital, shows clearly a great enlargement of the heart in which the right side shares to a moderate degree, while the left ventricle is greatly hypertrophied, extending to the left thoracic wall.

The second case was a boy, aged 10 years, who had a negative history up to six weeks before admission into the Drexel Home, when he began to have cough, night sweats, and emaciation. Examination shows a double mitral murmur with great epigastric pulsation and occasionally a systolic murmur of tricuspid regurgitation, although there is as yet no œdema. The X-ray plate offers quite a contrast to that of the first case, showing moderate hypertrophy of the left ventricle and great enlargement of the right side.

The third case was a girl, aged 2 years, who was admitted into the Children's Hospital with a rather inflamed ulcer of the left arm, following a scald by hot tea. There was high fever, and auscultation revealed the presence of a systolic murmur with two characteristics—soft over the aortic cartilage and harsh over the pulmonic, the latter being transmitted under the left clavicle. For several days the temperature was hectic and a septic endocarditis was feared, but coincident with the internal administration of bichloride of mercury the fever ceased and the aortic element of the murmur disappeared. The pulmonic stenosis is still present, but does not seem to affect the child's health in any way, and there is a possibility that it is dependent on some congenital lesion.

Dr. A. P. Francine spoke of the clearness of negatives taken with one of the newer X-ray machines, which were almost instantaneous in action, requiring less than half a second for exposure. He said that with such a plate one was able to see not only the position of the heart, but one was also able to get its change in position and size in systole and diastole. He called attention to the fact that in diastole the heart could be noted in its contracted state, and that there was a distinct area during diastole beneath the heart, *i. e.* between the heart and the diaphragm, which was not noticeable by any other method of examination, which was probably due to the contraction of this organ permitting the transmission of the rays to the lungs posteriorly. He said that Dr. Leonard had taken a number of plates for him which had shown this feature very distinctly. He also spoke of the value of such plates in studying the lungs, as lesions were brought out clearly and even the normal structure of the lung could be noted. He said that in cases of aortic regurgitation he had been interested in examining the femoral vessels for the presence of Durozier's murmur and Traube's sound. The former occurred quite regularly, while the latter was much rarer. He had seen lately two cases in which it was present, both young adults around twenty years of age.

Dr. Griffith said that he had hoped to show a girl, aged 9 years, with pure aortic regurgitation this evening, but she was not well enough to take out. The condition is common enough in adults, but is well known to be of decidedly infrequent occurrence in childhood—at least, unassociated with other valvular lesions. Eventually the cases of aortic regurgitation are liable to develop cardiac dilatation and consequent mitral leakage.

Dr. Hand said that he had noted Traube's sound in these cases, but Durozier's murmur was not found.

Calmette, von Pirquet, and Moro Cutaneous Reactions.—Drs. Hamill and H. C. Carpenter showed five children who had been simultaneously tested with the conjunctival reaction of Calmette, the cutaneous reaction of von Pirquet, and the ointment reaction of Moro. They briefly described the technique of the various methods, and pointed out that there was less alarm and resistance on the part of the child to either of the cutaneous tests than to the eye test. The cases which they presented showed the various degrees of each of the reactions. They had been especially impressed in their work by the uniformity of the reactions. They not only secured all of the reactions in practically all of the cases, but the degree of the various reactions was the same in the individual cases. They had quite a high percentage of complications with the conjunctival test, the most serious being phlyctenular conjunctivitis and keratitis. In one case a central ulcer of the cornea resulted. The fact that the eye test had shown absolutely no advantages over the cutaneous tests, and on the other hand, the disadvantages mentioned, induced them to conclude that the test was too dangerous to justify its general use. The eye inflammations come quite some time after the instillation of the tuberculin. One case developed nine days after an instillation, which had not produced a reaction. This had been observed by Van Durme and Stocké. They were inclined to trace a similarity between this old eye reaction and the late cutaneous reaction of Daels. They thought the condition due to particles of dead bacilli in the tuberculin. They even professed to observe a difference in the clinical appearances between these cases and those of ordinary phlyctenular keratitis.

Dr. H. C. Carpenter added that they desired to present those reactions simply as "card specimens," illustrating the uniformity with which the Calmette, von Pirquet, and Moro reactions occurred. He preferred the Moro reaction, as with this reaction it is impossible to have any complications.

Dr. Francine said that he had made use of both the von Pirquet and Calmette reactions, and considered them of particular value as methods easily applicable to the general practitioner should they eventually prove to be specific, which seemed highly probable. He referred to the uncertainty of the tuberculin solutions in that there was no laboratory method of standardising them. Solutions have to be standardised by the clinician so far. He referred to his experience with three different specimens of tuberculin. He believed that a larger percentage of these cases than reacted were tuberculous in the sense of having latent or healed lesions, and was therefore inclined to agree with Mainini, who had shown, as had von Pirquet and Wolf-Eisner, that a much larger percentage of apparently healthy individuals react to the skin test than to the ophthalmic test. He mentioned the claim, which seemed to be well founded, that the skin reaction was more searching and reacted to latent or healed tuberculosis, while the eye test was more limited to response to active tuberculosis. Certainly in his own series four fifths of the cases did not have pulmonary tuberculosis, though they may have had a latent glandular infection. He mentioned the claim that the skin reaction gives about six times higher percentages in non-tuberculous individuals than the ophthalmic reaction, and that this was possibly due to there being more specific substances in the skin than in the conjunctiva.

Dr. Hamill said that the searching effect of the von Pirquet reaction is due to the dosage used. He is getting a very high percentage of reactions—80 to 85 per cent. These children have been brought from St. Vincent's Home.

Brachial Birth Palsy.—Dr. Arthur Newlin showed this child, born February the 28th, 1908. Family history was negative. Mother had three other children, all born without instruments and healthy. This child was born with instruments, forceps being applied, and the head delivered with some traction. There was difficulty in delivering the shoulders, the attending physician having said that the shoulders had been "locked." A few hours after birth the parents noticed that he did not use either arm, both arms hanging loosely by his sides. Within twenty-four hours the left arm had recovered, and the child has since had perfect use of that member; the right arm has remained totally paralysed. The forceps had also bruised the right side of the neck just below the lobe of the right ear. Examination shows a fairly nourished child, with some induration of the skin and subcutaneous tissues below the right ear. The right arm hangs flail-like by the side, with no attempt to move arm, forearm, or fingers. Handling the part seems to give the child pain. There is no evidence of fracture about the shoulder-joint. The arm is flaccid, the tissues flabby, without the normal tone which can be felt in the muscles of the left arm. The appearance of atrophy is masked by subcutaneous fat. The interesting points seem to be the complete paralysis, indicating extensive laceration or stretching of the brachial plexus, the condition being due to traction, and not to direct pressure, and the absolute flaccidity of the whole group of muscles, from the shoulder to the finger-tips.

Anaphylaxis to Horse Serum.—Dr. A. Parker Hitchens read this paper. If a healthy guinea-pig, not previously used for any experiment and the progeny of an unused mother, be injected subcutaneously with a small quantity of inoffensive proteid, foreign to its body, no apparent change in the animal occurs; but if after an interval of fifteen days this guinea-pig be injected with a second dose of the same proteid, death will result in a few minutes by paralysis of respiration, or the animal will exhibit severe and definite symptoms. At the time of the second dose the guinea-pig had been sensitised by the first injection; he had the condition known as anaphylaxis. Prophylaxis expresses to us a condition of diminished susceptibility, anaphylaxis indicates increased or hyper-susceptibility. Under the caption anaphylaxis to horse serum three series of reactive phenomena have been studied: (1) The Theobald Smith phenomenon, which concerns the hyper-sensitiveness of guinea-pigs to a second dose of horse serum; (2) the phenomenon of Arthus, which concerns principally rabbits. It is impossible to immunise these animals to horse serum. Repeated doses cause them to lose weight progressively after the first few injections; each new administration of serum subcutaneously causes a more severe local reaction, swelling and frequently aseptic necrosis. If several subcutaneous injections have been given and the next be injected into the peritoneum the rabbit dies in a very short time. On the other hand, intra-peritoneal injections are well borne by the majority of rabbits, but they become extremely sensitive to subcutaneous injections; and (3) the so-called serum disease in man, the most valuable communication concerning which is the monograph by von Pirquet and Schick. With this class of phenomena should undoubtedly be grouped a large proportion of those cases of sudden death following the injection of alien sera into man for therapeutic purposes.

Among other examples of reactions possibly due to a condition of anaphylaxis in man may be mentioned the tuberculin and mallein reactions, the accelerated or immediate reaction following re-vaccination, idiosyncrasy to certain drugs, such as quinine, atropine, morphine, and to certain foods, such as eggs, fish, or strawberries. Particular attention has been given to the blood serum of the horse, chiefly on account of the very widespread use of this albuminous fluid in medicine. It was at first thought that possibly the antitoxic principles of horse serum had something to do with anaphylaxis, but it can now be stated positively that this is not the case.

It is necessary that a definite period of time shall elapse between the first dose of serum and the establishment of anaphylaxis as evidenced by the appearance of toxic symptoms following the second injection. This period is from ten to twelve days. The fact that the incubation period of many infectious diseases and the period elapsing between the injection of serum and the appearance of the so-called serum disease are nearly the same is very striking. If the second dose of serum is given before the end of this incubation period, not only do the symptoms of poisoning not occur but the animal is rendered immune to subsequent injections of serum.

Anaphylaxis is specific within certain limits. An animal sensitised by one proteid may sometimes be killed by another, but only with a larger dose. Many theories have been offered to explain this phenomenon. Rosenau and Anderson suggest that profound chemical changes in the central nervous cells are produced by the first injection. Gay and Southard believe that the sensitisation of guinea-pigs "is due to the non-neutralisation and non-elimination by the animal body of a factor in the serum," for which they suggest the name "anaphylactin." When the first dose of serum is injected the greater part of it is eliminated within a short time, but the anaphylactin remains. It acts as an irritant to the cells, stimulating them to greater activity in the elimination of serum, so that when at the end of fourteen days a second dose of serum is given it is rapidly decomposed, and the poison set free overwhelms the animal. Vaughn believes that sensitisation depends upon the stimulation of the body, by a first injection of proteid, to the formation of a proteolytic ferment. This ferment is specific. It is stored up in the body cells and remains until activated by a second injection of the proteid. When this second injection is given the ferment is activated, and this sets free the poisonous part of the proteid. Nicolle has arrived at the conception that, following the injection of any proteid, there are produced by the body-cells two classes of reactive substances. If soluble toxine be injected, a toxolysin and a toxocoagulin result. If proteid is injected, albuminolysin and albuminocoagulin are formed; if cells, cytolysin and cytocoagulin. The proportions in which these substances are formed depend upon several factors; the effect of a subsequent injection of the same proteid depends on this proportion. The function of the coagulin is to condense the substance administered and preserve it until it can be slowly removed by the lysin. The function of this lysin is to decompose and eliminate foreign toxines, proteids, or cells. In this process of decomposition the true toxine is set free. This liberation of the true toxine takes place after every injection of crude toxine, proteid, or cell. If the coagulin is in proper amount, and is able to act on the material injected in sufficient quantity, the true toxine is liberated very slowly and does the animal no harm.

One of the most important questions which emerges from a study of these problems is the possibility of eliminating from proteids the cause of anaphylaxis. Will this be possible even after we thoroughly understand the mechanism of the phenomenon?

Hyper-susceptibility to Horse Serum in Man.—Dr. B. F. ROYER read a paper with this title.

Dr. HITCHENS then gave a practical demonstration of anaphylaxis upon several guinea-pigs.

Dr. D. H. BERGEY said that there appeared to be three types of reactions following injections of alien serum and other proteins, as was pointed out in detail by Dr. Hitchens. The most important type of these reactions is known by the name of "anaphylaxis"; the second type consists of those peculiar skin eruptions which are known as "serum disease," and to which von Pirquet and Schick first called attention: the third type of reaction has only been seen in animals and consists of local necrosis. The causes of these various reactions are not definitely known, and it remains for the experimental pathologists to inform us more fully on this point. The pathologic changes in anaphylaxis are interesting, and may throw light on the mode of production of this reaction. In experimenting on this subject with living bacteria, effects are produced which appear to be identical to those seen in animals injected with alien serum. In the animals injected with living cultures he had seen marked hyperæmia of the abdominal organs, with hæmorrhages into the stomach and intestinal walls, and marked congestion of the meninges of the brain and cord. The influence of etherisation in apparently inhibiting the anaphylaxis reaction may possibly be due to its action in causing a cerebral anæmia, and thus causes the poison to be neutralised in the other tissues of the body. The clinician is especially interested in the prevention of these various reactions. No definite preventive measure is known to-day unless it be the mode of administration of the serum. Small doses frequently repeated are said to permit of the administration of doses of serum during twenty-four hours, which, under ordinary conditions, would cause unfavourable effects when administered at a single dose.

Dr. FRANCINE referred to the recent paper by Rosenau and Anderson, in which they had instilled a weak solution of the purified tuberculin into the eyes of a number of laboratory assistants, all of whom where apparently in good health. Six days later they repeated the instillation in the same eye, with the result that practically all, if not all, had given a very definite reaction. This was an example of anaphylaxis in the human being, albeit a local phenomenon. He was glad that Drs. Hitchens and Royer had emphasised the fact that there was no danger of anaphylaxis in the use of horse serum in man.

Dr. HAMILL remarked that public demonstrations of this sort were decidedly dangerous.

Dr. HITCHENS said that he had considered the advisability of giving a demonstration of anaphylaxis, and had been assured that there would be no danger in that assemblage. He added that the studies in anaphylaxis will help to eliminate from our vocabulary the meaningless word, "idiosyncrasy." Drs. Royer and Bergey have spoken of the different ways in which man and animals react to the injection of proteids, and Dr. Hitchens stated that these reactions are quite different. The fact that guinea-pigs die suddenly after the second dose of serum should not lead one to suppose that such a thing will happen in man. We know that it does not.

Dr. J. H. McKEE spoke of a case of severe diphtheria in a child who had had 400 units of antitoxine on two successive days. From fear of anaphylaxis the attending physician hesitated to repeat this dose; but Dr. McKee ordered it, and the child did better. But more antitoxine was required on several days before recovery resulted. Dr. McKee thought that the fear of anaphylaxis seriously endangered the child's life.

Abstracts from Current Literature.

Medicine.

The recent epidemic of poliomyelitis in New York ('*New York Acad. of Med.*,' *November* 7, 1907; '*Med. Rec.*,' 1907, *p.* 873).—**V. P. Gibney** and **Carleton Wallace** presented a report on this matter. In 63 out of 100 cases some intestinal symptoms had preceded the onset of the affection, which may therefore be of intestinal origin. Thirty-six cases had developed in the first year of life, 105 in the second year, 97 in the third, 69 in the fourth, 18 between the fifth and eighth years, and 4 after the twelfth year. **Emmett Holt** gave an account of twenty-nine previous epidemics that had been previously reported, the most extensive being in Norway and Sweden. In only four of these had the number of cases exceeded a hundred. The recent epidemic in New York had been the most extensive on record. Several instances occurred of a number of children in the same family being affected. No deductions could be drawn from the association of poliomyelitis to other diseases. The highest mortality had been 41 deaths among 210 cases. During 1905 and 1906 in Norway, 1053 cases occurred with a mortality of 13 per cent. **A. Jacobi** pointed out the association between poliomyelitis and polioencephalitis, and referred to a number of cases of the former affection which had been complicated by cranial nerve palsies. **Henry Koplik** divided the cases clinically into (1) those beginning with cerebral symptoms; (2) those resembling acute infectious neuritis, with marked pain; and (3) the classical type of poliomyelitis. Rapid atrophy of muscles was a marked feature. **Henry Heiman** had studied 40 cases this year, 23 being female and 17 male. The youngest patient was seven weeks old, the oldest nine years. The onset was sudden in 34 cases and gradual in 6. Seven of the cases showed bulbar symptoms, which might occur alone, or might precede, or follow the limb palsy; four of each died. The average leucocyte count was 13,000. ERNEST JONES.

Blood changes in Barlow's disease (*'Gaz. des Hôp.,' January* 9, 1908, *p.* 27).—**Prosper Merklen** and **Léon Tixier** report the following case in a male child, aged 2 years. The early symptoms were pallor, pain in the lower limbs, and attacks of diarrhœa. There was a painful pseudo-paralysis of the lower limbs and deep palpation was very tender. No ecchymoses or sub-periosteal hæmatomata were found. The red cells counted 1,980,000 at the height of the disease, and the hæmoglobin 70 per cent. (Tallquist); there was no leucocytosis, and the differential count was a normal one. Antiscorbutic treatment relieved the other symptoms, but at the end of ten days the red cells were still only 3,450,000, and the hæmoglobin 60 per cent. Ferrugineous treatment was then instituted, and in ten days the count was 4,650,000 and the hæmoglobin 85 per cent. The writers urge that iron should be employed in all the cases presenting marked anæmia.

ERNEST JONES.

Mistakes in the diagnosis of joint diseases in infants (*'Journ. de Med. de Paris'*).—**Barbier** believes that many cases of rheumatism and of syphilitic joint disease are diagnosed as tubercular and have undergone a long and tedious treatment which was quite unnecessary. He mentions the case of a child, aged 7 years, who had pain in the right hip with slight limping; it was diagnosed as tubercular by a surgeon and was immobilised in a plaster dressing; later pericarditis appeared and the case was given into the charge of a physician, and was rapidly cured by anti-rheumatic treatment. Syphilitic joint affections may also easily be mistaken for rheumatism. The following points are of importance: slight or absent pain, absence of deformities, but simple swelling of the epiphyses; only, unfortunately, they do not appear at the beginning of the malady. Syphilitic joint affections occur chiefly between the ages of eight and thirteen years, and most commonly affect the knee or shoulder: sometimes they attack the spine and may be mistaken for Pott's disease. The practical point is, think of syphilis when a disease begins in one joint or in the vertebræ, put the patient at rest in bed, and do not condemn him to the prolonged treatment for tubercular joint disease until the diagnosis is reasonably clear. J. PORTER PARKINSON.

Periodic vomiting in the infant ('*Journ. de Med. de Paris,*' *November,* 1907).—**Monlau** describes the symptoms as beginning often abruptly, or occasionally being preceded by constipation and lassitude. Then vomiting begins, often not preceded by nausea; the vomit soon becomes watery and may be tinged with blood. The breath has the odour of acetone. The vomiting recurs, often repeatedly during the same day, sometimes without cause, sometimes due to ingestion of food. Prostration is rapid, but the mind is clear. The pulse becomes frequent, perhaps irregular. The temperature may go to 38° C. or rarely to 40° C.; sometimes it is normal throughout. The tongue is only slightly furred; the abdomen often hollowed. Sometimes the liver is enlarged and tender. The urine is scanty and contains more or less acetone. After some hours or days the vomiting lessens and then ceases, and the child rapidly convalesces. Sometimes, however, the attack lasts two or three weeks. These crises get less as age advances and tend to disappear about puberty. They are most frequent between two and seven years of age. Girls are more frequently attacked than boys. As regards pathology: some consider there is some relation to appendicitis, others to a muco-membranous enteritis. The treatment is small repeated doses of calomel during the attacks, with open-air exercise in the intervals. Hydrotherapy is useful. The diet must be carefully supervised. J. PORTER PARKINSON.

Plagiocephaly ('*Journ. de Med. de Paris,*' *November,* 1907).—**Eschbach** quotes Topinard's definition of this condition as "asymmetry sufficiently marked to make the maximum longitudinal anterior posterior diameter oblique," and compares it with an oblique pelvis. There is a projection of the frontal region on one side with a flattening of that side of the cranium behind; on the other side the parieto-occipital region retains its normal convexity, or this may be actually increased. Measurements may be made from symmetrical points on the frontal bones to the parieto-occipital sutures, and so results may be compared with each other. It is probably partly due to laying the infant in his cot always on one side; it is favoured by rickets and indirectly by hereditary syphilis. The condition has no influence upon intelligence. J. PORTER PARKINSON.

The treatment of hæmophilia ('*Journ. de Med. de Paris,*' *November,* 1907).—**Labbé** discusses the various remedies which have been tried for hæmorrhages in this condition, viz. perchloride of iron, antipyrin, ergotin, chloride of calcium, gelatin, thyroid, adrenalin, etc., each of which have been vaunted as cures, but have been soon superseded by other drugs. Vegetarianism has advocates, but no successes. Adrenalin has been useful locally; also in one case of purpura hæmorrhagica the bleedings ceased after the subcutaneous injection of this drug. Gelatin has been given in three ways—locally, by the stomach, and subcutaneously. The author considers all three methods are equally inefficacious. Gley and Richard think that any value it has is due to the acid reaction and the lime salts it contains. Simple serum has been said to be useful, but the results appear to be due to a coincidence merely; the same applies to isotonic injections of sea-water. Thyroid extract seems to be more useful in purpura than in hæmophilia. Chloride and lactate of calcium are warmly advocated by Arthus and Wright. Weil shows the great value of intra-venous injections of 10 to 20 c.c. of fresh serum; this reduces the time of coagulation of the blood to the normal, and, he says, completely prevents further hæmorrhages. The effect appears to last about five weeks. These injections are made with serum not more than a fortnight old, taken from man, the horse, or the rabbit. This last method is worth further trials.

J. PORTER PARKINSON.

Acute appendicitis in the infant ('*L'Echo Med. du Nord,*' *December,* 1907).—**Julien** quotes Kirminon, who says appendicitis is one of the most important surgical affections of infants; it is essentially a disease of infants. Julien in one year has had six cases, five of which were operated on with one death. He does not believe in the saying, "operate always and at once." His cases are as follows: (1) Very severe, acute appendicitis, with retro-cæcal abscess: operation the third day; cure. (2) Acute calculous appendicitis, retro-cæcal abscess: operation the third day; cure. (3) Acute appendicitis, with local peritonitis, but less severe than preceding: medical treatment; cure. (4) Acute suppurative appendicitis, with pointing of abscess towards lumbar region: incision of abscess in the loin; cure. (5) Acute appendicitis, with generalised septic peritonitis: operation on seventh day when patient was *in extremis*; death fifteen hours after operation. (6) Acute appendicitis, with generalised hæmorrhagic peritonitis: operation *in extremis*; cure, the drainage tube being removed on the tenth day.

J. PORTER PARKINSON.

The treatment of chorea ('*Med. Record,*' *January,* 1908).—**H. Koplik** in discussing the treatment of chorea, points out that the disease has the character of an acute infectious disease of self-limited duration, and one must sharply differentiate between various sets of cases and their degree of severity. It is hopelessly incorrect to apply the same therapy in all cases. The indiscriminate prescription of arsenic is harmful, and it is more dangerous because of its effects on the kidneys—a fact which has entirely escaped notice. When arsenic is given by the intensification method, albumin may appear in the urine before any other toxic symptoms, sometimes when only fifteen drops of the liquor were being given daily to a child of six or eight years old; this clears up when the treatment is suspended. Casts may also appear and even blood-cells. The writer states that the urine is the best test for the limit of toleration of arsenic. In mild cases a modified rest cure without medicine is all that is necessary, provided there is no evidence of cardiac complications. Trional 5 gr. three times a day or small doses of chloretone may be useful as a sedative. Open air, play without due excitement, may act in mild cases better than strict isolation. In more severe cases bed is necessary, but when the heart is affected arsenic is not advisable; sodium salicylate is useful, and strychnine as a bitter tonic. A cold pack followed by friction may be given. In the severe cases where speech is lost the use of arsenic is fraught with danger. A bed with padded sides is necessary, and sedative drugs with strychnine and careful diet will be of the greatest service.

J. PORTER PARKINSON.

Typhoid fever and purpura hæmorrhagica ('*Gaz. degli. Osp.*,' 1907, *p.* 1296).—**Carcaterra.**—A girl, aged 12 years, whose family and personal history was negative, on the thirtieth day of an ordinary attack of typhoid fever had hæmatemesis and melæna. The next day petechiæ appeared on the thighs and knees, and later on the thorax, abdomen, and upper limbs. Subsequently the gums bled spontaneously. Injections of adrenalin (1 in 1000) and camphorated oil were employed. Death occurred within a week of the onset of the symptoms. J. D. Rolleston.

Vaccination and whooping-cough ('*Journ. de Méd. et de Chir. Prat.*,' *December* 10, 1907, *p.* 902).—**Duboucher.**—The antagonism between vaccinia and pertussis is illustrated by the following figures: During a severe epidemic of whooping-cough 53 cases were vaccinated. Recovery was rapid in 10, the paroxysms ceasing within a week. In 19 cases there was a decided improvement; in 16 cases there was only slight amelioration, and in 8 cases the result was *nil.* J. D. Rolleston.

Infectious diseases and hospital administration ('*Journ. Roy. Inst. Pub. Health,*' *December*, 1907, *p.* 705).—**Goodall.**—This interesting paper, which is based on twenty years' experience of infectious disease, deals with the occurrence of secondary diseases in fever hospitals, the provision of isolation wards, the question of "return cases," the infectivity of the ordinary complications of scarlet fever, and the discharging of patients from hospital. J. D. Rolleston.

Diphtheritic hemiplegia (Abstract by **Soukhanoff** in '*Rev. Neurol.*,' *December* 15, 1907, *p.* 2145).—**Moltchanoff** records the case of a girl, aged 10 years, who on the eighth day of diphtheria showed very marked weakness of the cardiac sounds and commencing palatal palsy. On the eleventh day she had a sudden attack resembling an apoplectic ictus followed by aphasia and complete right hemiplegia. The autopsy showed thrombosis of a branch of the middle cerebral artery and parenchymatous degeneration of the myocardium, with inflammation of the interstitial tissue.

J. D. Rolleston.

Acute encephalitis in gonorrhœa ('*Centralb. f. Nervenheilk.*,' 1907, *p.* 328).—**L. Königsberger.**—A girl, aged 5 years, was admitted to hospital with gonorrhœal vulvo-vaginitis. She had been suffering from headache, vomiting, and somnolence for a week. On admission the pupils were unequal and sluggish in reaction to light. There was left facial palsy, and the knee-jerks were exaggerated. The ophthalmoscope showed hæmorrhagic papillitis. The temperature was slightly raised; pulse 100. Two days later paresis of the legs developed, most marked on the right side, on which Babinski's sign was present. Calomel at first, and later potassium iodide were administered, and complete recovery took place in five weeks. The initial diagnosis of meningitis was subsequently altered to encephalitis.

J. D. Rolleston.

Æstivo-autumnal fever in a child ('*Arch. of Pediat.*,' *December*, 1907, *p.* 918).—**R. O. Clock.**—A girl, aged 2½ years, was sent to hospital as a case of pneumonia. On admission signs of pulmonary congestion were present, but soon disappeared. On the fourth day the temperature fell 6° F., but rose again next day. The spleen was then enlarged. There were no typical malarial symptoms, but the plasmodia were found in the blood on the seventh, eighth, and ninth days. Forty grains of aristochin were administered daily, and her temperature rapidly became normal and remained so. A week later no plasmodia were found in the blood. Aristochin was continued in 1 grain doses thrice daily for a fortnight. No relapse occurred. The source of infection could not be found. J. D. Rolleston.

The exudative diathesis of Czerny (*'Arch. of Pediat.,' December*, 1907, *p.* 927).—**A. Hymanson.**—Professor Czerny, of Breslau, has introduced the term "exudative diathesis" in place of the obsolete "scrofula," to designate a morbid condition common in children which rests upon a congenital anomaly of the organism, and affects almost all the children of the same family in different degrees. The condition is a common one, and has nothing to do with tuberculosis, though tuberculosis may be secondary to the exudative diathesis. It often appears during the first year. The geographic tongue or localised thickening of the lingual mucous membrane is the first symptom observed. Seborrhœa of the scalp, prurigo, and intertrigo are also early symptoms. In older children the mucous membranes are very liable to be inflamed. Hence coryza, pharyngitis, bronchitis, conjunctivitis, otitis, and vulvitis are common. In treatment three things must be borne in mind: (1) Careful feeding; (2) the condition of the nervous system; (3) avoidance of intercurrent affections. Any fattening nourishment is injurious. After the second year a vegetable diet is best. Eggs are most unsuitable, a small quantity of meat is less harmful. Plenty of water should be given, but very little milk, no cream, no butter, and no sweets. Breast-fed children who show signs of the exudative diathesis should have their feeds reduced. The older children should associate with others of their own age, and not be taught to consider themselves invalids. Hymanson testifies to the value of Czerny's treatment. In one family the children were always suffering from eczema, intertrigo, and various catarrhs. Removal to the country and a vegetable diet were followed by satisfactory results. On return to New York the children suffered from tonsillitis and various catarrhs, but the skin diseases were absent.

J. D. Rolleston.

Subnormal temperature in a newborn child (*'Pediatrics,' January*, 1908, *p.* 33).—**F. W. Loughran.**—On the fourth day of life a female child, hitherto apparently healthy, had a temperature of 106° F. For the next fortnight the temperature remained high. The condition was attributed to septic infection, the point of entry being the umbilicus. On the day before death the rectal temperature registered only 80° F. Several thermometers were used and left *in situ* ten minutes. Three hours before death the temperature was 78° F. J. D. Rolleston.

Sensory symptoms in anterior poliomyelitis (*'Pediatrics,' December*, 1907, *p.* 743).—**Browning.**—Though acute anterior poliomyelitis is a purely motor affection in its late stages, during its onset, development, and often during the subacute stage sensory manifestations are common. These are of three kinds: (1) Impairment or loss of all forms of sensation in the affected part. This sensory disturbance is transitory, and is possibly due to hyperæmia and infiltration of the anterior grey matter cutting off the transit of sense impressions in the sensory tracts. (2) Paræsthesia, stiffness, heaviness, and numbness occur in the parts affected. (3) Pain. Various forms occur, some at the onset and during the acute stage, while a special form belongs to the subacute. There may be initial headache, as at the onset of most acute infections. Areas of hyperæsthesia or hyperalgesia may appear in various parts, such as the soles, the popliteal space or the shoulder. Sometimes the pain is very severe, and may persist for one or more weeks, in which case it is probably due to involvement of the spinal meninges. In many such cases there may be distinct tenderness along the spinal column which is relieved by counter irritation. During the subacute stage the pain is due to myositis, and is confined to the affected muscles. There is not much spontaneous suffering, but pain can readily be elicited by motion or manipulation. Its duration is from a week to a month.

J. D. Rolleston.

Anorexia nervosa in children ('*Arch. of Pediat.*,' *November*, 1907, *p.* 801).—**Forchheimer** records four cases of this condition. Two were mild cases in girls, aged 7 and 12 years. Two were severe cases in boys, aged 1 and 3 years. The elder boy, for whom the parents refused proper treatment, died. The clinical picture of hysteria in children varies with the age of the child. In young children it tends to be mono-symptomatic, while in older patients it more closely resembles the adult form. In the third case, which is the youngest on record, there was no psychical or physical evidence of hysteria except the anorexia; in the others definite stigmata were present. Forchheimer thinks that all the cases are curable if properly treated. Removal of the children to a properly equipped institution is of paramount importance.

J. D. Rolleston.

Inhalations of ozone in the treatment of whooping-cough ('*La Medecina de los Niños*,' *September*, 1907).—**Martinez y Roig**, from his personal observations of this treatment, makes the following remarks: (*a*) It is of value during the convulsive period of the illness. (*b*) It quickly diminishes both the number and the intensity of the attacks. (*c*) It should be employed for a fortnight, relapses being noted if it is abandoned too early. (*d*) The dose is from one to three parts of ozone to a litre of air; the daily inhalation should last ten to twelve minutes. (*e*) It should not be used during febrile attacks nor with thoracic complications. (*f*) The length of illness is considerably shortened.

M. D. Eder.

Diabetes insipidus ('*Allgemeine Wiener medezinische Zeitung*,' *November* 12, 1907).—**Mautner** showed a girl, aged 14 years, with inherited nervous tendencies, who had been under treatment for a month. Beyond pronounced hysterical manifestations there was nothing noteworthy in the examination. The urine was characteristic. Treatment at first consisted in hot baths, electric baths, and injections of pilocarpine; it produced no results. The treatment was then changed to a daily introduction of the stomach-tube without lavage. The good effect was immediately apparent. The urine fell from 13½ to 8 litres, with a corresponding decline in the quantity of liquid taken. The body-weight rose. He believed that the disease was of hysterical origin, and he regarded the cure as due to suggestion. Probably lavage would have acted similarly, but the nature of the cure would have been less easily ascertained.

M. D. Eder.

Late infantile myxœdema (*'La Med. de los Niños,' November*, 1907). —**Iglesias** reports the history of a girl, aged 12 years, a native of Puerto Rico, who developed normally till the age of 3. Thereafter it was noticed that the child scarcely grew. There was complete suspension of intellectual development. The condition of the child corresponded exactly to myxœdema; the height 3 feet 5 inches, the head was disproportionate. Speech was slow and the words those used by a child of three. Thyroid gland was administered for eighteen months without any improvement. The atrophy of the thyroid was probably due to some infectious process of gastro-intestinal origin. During its second year the child had had many attacks of this nature, accompanied by high temperature and convulsions.

M. D. Eder.

Osteopathy in hereditary lues (*'Wien. klin. Rundschau,' December* 1, 1907).—**Goldreich** showed a child who over a year before had been presented, when the differential diagnosis had been arrived at of osteogenesis imperfecta or hereditary syphilis. There was then tardy ossification in the skull with a simultaneous hyperplastic process going on in the other bones. The further course of the disease led to osteochondritis of the shoulder- and elbow-joints of the right arm. Success ensued on anti-syphilitic treatment. The father was found to have had syphilis.

M. D. Eder.

A case of enlargement of the heart in infancy (*'Berliner klin. Woch.,' M.* 45, "*Gesellschaft der Charité Aertze*").—The case shown by **Bahrdt** was that of a boy, aged 1 year and 5 months. The parents were healthy and no cases of heart affections had occurred in the family. During the first year the child seemed healthy with the exception of a little gastric catarrh towards the end of that period. At the beginning of the second year its sleep began to be disturbed; at times it was found sleeping while sitting up. Three and a half months later it first showed signs of serious illness; it vomited and was feverish, and often cried out without any apparent cause. It became pale, the skin acquired a yellowish tint with much irritation, but showed no sign of icterus; the face and feet became swollen, dyspnœa came on, the breathing was noisy and laboured, but not increased in frequency. The behaviour of the child was peculiar: it became restless, took its bottle slowly, cried readily, and avoided every exertion. For some weeks the mother had noticed that the child cried during micturition and passed very small quantities of urine; at times it passed none throughout a whole day. The vomiting became more frequent, and diarrhœa coming on medical advice was sought. On examination the child was found to be well developed for his age, extremely pale, and preternaturally quiet; the face was rather puffy, the superficial veins of the thorax and the cheeks were very evident; the mucous membranes were pale, and livid in parts. There was 70 per cent. hæmoglobin, but no serious blood change. An examination of the heart showed a decided increase of heart dulness, especially to the right. As indicating an enlargement of the left side of the heart the apex beat was particularly low down, namely in the sixth intercostal space. There was no special dulness over the manubrium sterni, no murmur during the whole course of the illness; the second pulmonary sound was blowing. A radiograph showed an enlargement mostly to the right; there was no particular shadow noticeable over the maubrium sterni; there was no enlargement of the thymus. The pulse was rapid, but not especially weak (150, and at times 120). The liver was markedly enlarged, up to two fingers' breadth below the margin of the ribs: there was no enlargement of the spleen; the urine was normal. The child was treated with digitalis, sleep became quieter, and more nourishment was taken. It was clear there was some heart affection, but of what kind was a subject for consideration. At the age of this child heart affections are very rare, but they may also remain undiagnosed. Many known causes to which they can be attributed in adults are obviously absent in infants. Congenital malformations especially have to be thought of; there was no morbus cœruleus, such as accompanies absence of the septum or persistence of the ductus Botalli. Incomplete development of the large blood-vessels may occur without much cyanosis; even in adults such conditions are found without cyanosis. There was not found in the history of the case anything to indicate previous valvular disease. Infectious endocarditis (not the so-called fœtal endocarditis) which occurs in infancy remains stationary. Lemp has given a short account of seven such cases occurring in the children's hospital in Berlin, in which the chief symptoms were different from those met with in adults. Though murmurs may especially be absent in endocarditis of infancy, no other symptoms of endocarditis were found in this case. Sepsis, which is so frequent in infancy, had not given rise to an endocarditis, of which, according to Lemp, it is very rarely a cause in infancy. There had been no occurrence of pneumonia, influenza, or tuberculosis; there was found no toxic cause which could have led to a damage of the heart muscle; there was no nephritis nor alcoholism. Diphtheria could certainly be excluded. There was no hypertrophy of the thymus gland such as sometimes accompanies hypertrophy of the heart. Bahrdt thought that some idiopathic or congenital hypertrophy of the heart may have existed, and that such a condition must be diagnosed in this case, although the possibility of a fœtal valvular disease could not have been quite excluded. Various explanations of such cases have been given: Virchow, in reference to a case which was observed and described by Heubner and Hauser, looks upon the condition as a form of rhabdomyoma, but this has not been confirmed by cases investigated post mortem. The "Naturalists' Society" in Stuttgart have a collection of preparations by Oberdörfer which show that these muscular hypertrophies, for which one finds none of the usual causes, are not very rare; there were six cases in early childhood which showed an enormous hypertrophy of the heart muscle. Simmonds, Hedinger, Raissa, and Efron have described similar cases. Another explanation given was that a congenital narrowing of the aorta, chiefly at the isthmus, leads to a secondary hypertrophy of the heart muscle, and that in those cases in which this narrowing has not been found, perhaps in an earlier fœtal period such narrowing has occurred and led to hypertrophy, compensation taking place in later fœtal life. Bahrdt showed his case also because it was of importance from a diagnostic point of view. Such hypertrophy could easily be overlooked if not thought of, it being especially noticeable that the symptoms were different from those in adults. In this case the child was brought on account of a stomach condition and intense anæmia; it was possible that much anæmia in childhood was connected with such a hypertrophy of heart muscle. J. E. Bullock.

Pathology.

Pathology of the cerebro-spinal fluid (*'Quart. Journ. of Med.,' vol.* I, *No.* 2).—**Forbes** details the bacteriological and cytological examination of the cerebro-spinal fluid in 140 cases of disease in children. The series included 57 cases of tuberculous meningitis, 6 of meningococcal, 16 in which the meningitis was due to other organisms, such as the pneumococcus, streptococcus, staphylococcus, or *Bacillus coli communis*, 3 cases of syphilitic meningitis, 14 cases in which other cerebral lesions, such as abscess, were present, and 14 cases in which meningeal symptoms were due to other diseases, such as whooping-cough and broncho-pneumonia. Tubercle bacilli were found in 27 cases of tuberculous meningitis in the clot of the cerebro-spinal fluid formed on standing, and an excess of lymphocytes, amounting to 97·5 per cent. in some instances, was observed in 31. In severe meningococcal cases the meningococci were found in every instance, the cerebro-spinal fluid being turbid and containing an excess of polymorphonuclear cells, together with a quantity of albumin. In less acute cases the fluid was clear and contained only a few cells, chiefly polymorphonuclears, and a faint trace of albumin, while in chronic cases there were only a few degenerated lymphocytes and no albumin. In the pneumococcal cases the pneumococcus was found in 9, in most of which an excess of polymorphonuclear cells was present. Streptococci were found in 4 cases out of 5; from one case a pure culture of the colon bacillus was obtained, a large number of polymorphonuclear cells being present in the fluid. In the syphilitic cases the cerebro-spinal fluid proved sterile in all and afforded an excess of lymphocytes. In 8 cases of cerebral symptoms occurring in the course of other diseases the fluid, after centrifugalising and evaporation, yielded numerous minute, colourless rhomboid crystals, the nature and significance of which is unknown.

T. R. Whipham.

Dentine in rickets (*'Wien. klin. Rundschau,' November* 24, 1907).—**Fleischmann** found from his researches that even in the very early stages of rickets there are considerable changes in the calcium of the dentine. In between the calcified portions of the intertubular tissue there are smaller and larger areas of uncalcified tissue. M. D. Eder.

Bacteriology of meningitis (*'Arch. of Pediat.,' December*, 1907, *p.* 881). —**F.S. Churchill.**—Non-tuberculous meningitis in early life is caused by a great variety of micro-organisms, of which Weichselbaum's meningococcus and Fraenkel's pneumococcus are the most frequent. The type of meningitis cannot be determined by the symptoms, but only by lumbar puncture. Pneumococcal meningitis is more fatal than the other types.

J. D. Rolleston.

Duration of immunity after injection of anti-diphtheritic serum. (*Jahrb. f. Kinderheilk.*, lxiv, 14, 3).—In an essay on the above subject **Sittler** sums up certain clinical and experimental results. His experience shows that prophylactic immunisation maintains a lasting result for a longer time (three to five weeks and more) when the immunised children do not come too often into contact with those suffering from the disease or convalescents; such precaution is necessary also on the ground of not making immunised persons carriers of the bacillus, and so spreading the infection. If immunised children be detained amongst those affected with diphtheria the immunity can only last a very short time (fourteen days). Unimmunised children fall ill in reverse proportion to the immunised. Catarrhal affections of all kinds, lesions of mucous membranes, cause even in immunised children a strong predisposing tendency to diphtheria, which in certain cases tends considerably to cut short the duration of immunity: such immunity does not increase in proportion to the quantity of immunising units injected. After injection of serum in cases of prolonged diphtheria, fresh diphtheritic illnesses can arise in certain proportionately rare cases, just as after serum injected under ordinary circumstances. (General scarlatiniform eruptions, even when they occur without fever and without severe affection of the throat, are in most cases true forms of scarlet fever.) The phenomenon of "anaphylaxis" (hyper-sensitiveness) after numerous injections of serum makes it desirable to institute careful isolation precautions, so that a repetition of prophylactic injections in one and the same person may not be necessary. J. E. Bullock.

Therapeutics.

The influence of diet upon breast-feeding (*'Deutsch. Aerzte-Zeitung,' December* 1, 1907).—**Weissmann** found from experience that in many women the deficiency in breast milk was due to insufficient or improper diet. If the mother is to nurse her child the pregnant woman must be properly fed; it is useless waiting till after the confinement. He sought for some cheap artificial food that expectant mothers of the badly-off classes might use, and one that did not require elaborate preparation. Malt-tropin (Malztropin) gave him such excellent results in four cases that he considers it desirable that it should be tried on a larger scale. Three of the mothers were multipara who had been obliged to give up nursing their other infants by reason of the absolute stoppage of the breast-milk. In these cases the breasts were lightly massaged; four tablespoonfuls of malt-tropin were given daily in water or milk. The food is continued after parturition. The fourth case was a primipara whose milk secretion ceased a few days after the lying-in. Under the same treatment in three weeks the mother was able to nurse her child and to give up all artificial feeding.
M. D. Eder.

Otology, Laryngology and Rhinology.

Wound of the meninges, the brain, and the left lateral ventricle by a foreign body passed through the ear; meningitis; operation; recovery (*'La Press Oto-laryngol. Belge,' August*, 1907).—The case was communicated by **Cheval**. The patient, a little boy, was held down by four others whilst a fifth pushed the metal rib of an umbrella into his left ear. Symptoms appeared on the fifth day after the injury. There was convergent strabismus of the left eye, restlessness, and high temperature. No optic neuritis. Blood examination showed 11,500 leucocytes per c.mm. Polynuclears 69 per cent., lymphocytes 25 per cent., mononuclear cells 6 per cent., eosinophiles and basophiles absent. The cerebro-spinal fluid contained a few red corpuscles and very abundant white corpuscles. Cultures on agar, serum agar, and bouillon remained sterile. On the seventh day headache and paralysis of the sixth nerve were present and an exploratory operation was performed through the squamous portion of the temporal bone, superior meatal wall, and tegmen tympani. A perforation of the petrous, corresponding with a tear in the dura, was found. One of the veins of the dura was thrombosed. This vein led to an extensive area of pachymeningitis near the tip of the petrous bone. The brain did not pulsate and seemed to be hyper-distended. The left lateral ventricle was deliberately punctured; turbid fluid escaped and the brain recommenced to pulsate. A drain of iodoform gauze was inserted. The upper part of the wound was sutured. Next day the temperature fell to normal, and the ocular paralysis disappeared. The drain was removed in four days and the patient was discharged cured in six weeks. MACLEOD YEARSLEY.

Surgery.

Uranoplasty in cleft palate ('*Prager med. Wochens.,*' *November* 21, 1906).—**Carl Springer**, in a general review of this question, states: (1) The best time for the operation is from the fourth to seventh year of child life; later operations also give good results. (2) Operation during the first year is not advisable because the mortality is far too high compared with the later operation. (3) The mortality of infants not operated upon is not nearly as high as is generally believed. M. D. EDER.

Congenital talipes ('*Med. Press,*' *January* 15, 1908).—**Fedden**, in dealing with equino-varus, points out that the posterior and internal structures in relation to the ankle-joint and the structures on the inner side of the foot are ill-developed and shorter than they should be. In treating the condition the equinus and the varus should be dealt with separately, the latter being cured before any attempt is made to rectify the equinus by dividing the tendo-Achillis. If the tendon is divided early free mobility at the ankle-joint is at once established, and any attempt to correct the varus is then a strain on the internal lateral ligaments instead of upon all the joints, tendons, and ligaments of the tarsus. Treatment of the deformity should be undertaken as early as possible. Manipulative methods alone will often cure slight cases, and in every instance should be first tried. Later, fascial bands, tendons, or ligaments can be divided beneath the skin. The position of the foot is forcibly corrected and an outside splint applied to keep the foot in position. Manipulations should be continued, and it may be necessary to break down other structures on more than one subsequent occasion. Time is thus allowed for the skin to stretch. When the varus is fully corrected the tendo-Achillis may be divided and the heel brought down. In extreme cases where the varus cannot be thus corrected there is some fixed bony deformity, and the author believes that in young children scraping out the centre of ossification of the astragalus is the measure best calculated to give a useful foot. Removal of the astragalus is not advised except in cases of extreme deformity, and after honest attempts at treatment by other methods have failed. T. R. WHIPHAM.

Retro-pharyngeal abscess in a girl, aged 11 years ('*Arch. of Pediat.,*' *December*, 1907, *p.* 932).—**H. Carpenter**.—During a household epidemic of influenza the patient was seized with high fever, sore throat, enlargement of the cervical glands, and torticollis. A week later a retro-pharyngeal abscess developed and was incised from the mouth. The abscess, which was probably due either to streptococcus infection or to the influenza bacillus, healed within forty-eight hours. Acute retro-pharyngeal abscess

in children over three years is rare, since the retro-pharyngeal glands are most prominent in infancy and diminish rapidly in size after the third year.
J. D. Rolleston.

Renal calculus in a child (*'Liverpool Med.-Chir. Journ.,' January*, 1908, *p.* 154).—**R. C. Dun.**—A girl, aged 6 years, had had intermittent hæmaturia and pain referred to the bladder for two years. The pain and hæmorrhage were unaffected by movement. There was no renal enlargement, but slight tenderness of the right kidney was detected on one or two occasions. The X rays showed a very definite shadow in the right kidney region. On operation a stone was found in the right kidney, composed of uric acid and weighing 6 grains. The child made a good recovery.
J. D. Rolleston.

Multiple dystrophies and syphilis (*'Bull. et mém. de la Soc. méd. des Hôp. de Paris,'* 1907, *p.* 787).—**Queyrat** exhibited a child with cranio-facial asymmetry, bilateral blepharoptosis, congenital dislocation of the hip, bilateral cryptorchidism, etc. The father had had syphilis at twenty-four, for which he had had only a fortnight's treatment. Five years later he married, and in another five years this child was born. Though the mother showed no evidence of syphilis, the activity of the father's disease was proved by the fact that four years after the child's birth he developed serpiginous ulcero-crustaceous syphilides of the abdomen and thighs, which healed under specific treatment. In the subsequent discussion Balzer stated that the existence of nephritis was in favour of the diagnosis of hereditary syphilis with predominance of dystrophic lesions. J. D. Rolleston.

School Hygiene.

Results of the examination of the physical and mental development in 1014 school children (*'Prager med. Wochens.,' December* 12, 1907).—**Quirsfeld** gives a detailed report of the children who have been continuously under his care during eight years. Among his conclusions are the following: Children of the better-off parents grow more quickly. Boys grow more rapidly in the early and girls in the later years. Increase in height is in inverse proportion to increase in chest measurement. Whilst during the eight years the boys gained 16½ kilos. the girls gained 23 kilos. Increase in weight bears no relationship to growth. Alteration in weight is of the utmost importance to the school doctor; it is a frequent indication of latent diseases. The school doctor should constantly compare the musculature, the general condition, and the weight of the children. The greater number of myopics are of weak constitution; as a rule the myopics are more intelligent. Right-sided scoliosis with myopia is very common among girls in the last two years of school life. In both sexes the children with good power of attention and good memory are those with heaviest body-weights, remarkably the case in girls. Good memory and attention are 10 per cent. more frequent among children of the better-off parents. [The paper is too long to quote in full. It is itself a summary by Dr. Quirsfield, whose name is well known to school doctors.] M. D. Eder.

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Original Articles.

SOME CASES OF INTUSSUSCEPTION.

By H. S. Clogg, M.S., F.R.C.S.,
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This paper deals with sixteen cases of intussusception in children. There were eleven male and five female children. Twelve cases were in babies under 12 months of age, and of these seven were 6 months of age or under: one child was just 12 and one 14 months. The youngest was 3 months and the oldest 3 years of age.

In fifteen cases the subjects were perfectly healthy children. In one case, a baby aged 1 year and 2 months, there had been wasting for some weeks, but there was no history of any bowel trouble. In one case diarrhœa had been present for a few hours before the onset of acute symptoms; one baby had had diarrhœa for two days and one for three weeks previously to the symptoms of invagination. Apart from these few exceptions there could not be elicited any cause for the intussusception in regard to errors of feeding or irregularity of the bowels. In no case was any local condition, *e. g.* a tumour found, which might have excited the invagination.

The variety of intussusception was as follows:

Ileo-cæcal (in which the ileo-cæcal valve formed the apex of the invagination), five cases.

Cæcal ileo-cæcal (in which the intussusception occurred in the region of the ileo-cæcal junction, but the caput cæci was the last part to unfold), five cases.

Ileo-colic (in which the ileum from 1 in. to 3 in. above the ileo-cæcal junction was the commencement of the intussusception, the ileum being invaginated as far as the cæcum and the latter then travelling on as the apex of the intussusception) four cases.

Colic (the invagination commenced 2 in. below the ileo-cæcal junction), one case.

Enteric (the invagination commenced in an intestinal diverticulum), one case.

In all cases (fifteen in number) which involved the large intestine the latter appeared to be provided with a mesentery.

SYMPTOMS.

The most constant symptom of onset was the "screaming" of the child. This occurred in twelve of the cases, and may be said to mark the time of commencement of the invagination. In Case 13 the child became fretful and irritable, and only later cried as if in pain. In three cases (2, 4, and 6) the passage of blood and mucus *per anum* was the initial sign. In Case 2 shortly after the blood was noticed the baby was very fretful and began to cry as if in pain. In Case 4 there was apparently very little pain (this case was seen two hours after the passage of the blood). Case 6 was characterised also by comparative absence of pain: the baby was fretful, but was never noticed to cry as if in pain during the four days of the illness.

Vomiting was a symptom at the onset, or very shortly afterwards in thirteen cases. In one case vomiting was not present until six, and in another not until seven hours. In Case 1 there was no sickness, although symptoms had been present for seven days. The vomiting was in all fifteen cases frequently repeated; at times associated with a paroxysm of pain, at times immediately after a feed, and again in some cases recurred independently of either of these predisposing factors.

Blood and mucus per anum.—In three cases (2, 4, and 6) this was the earliest sign of the invagination. In Case 1 symptoms had been present for seven days, but it was not until the seventh day when an enema was given that any blood had been noticed in the motions. In Case 7 blood was not passed until the sixth day. Case 12 was noticeable for the absence of blood, but a little blood was seen on the finger after a rectal examination. The duration of symptoms in this case was nine hours. In Case 15 (an enteric intussusception) there was no blood. In the remaining cases blood was passed on one or more than one occasion at variable intervals after the onset of the illness. The times at which blood was first passed are given as follows: Very shortly, 6, 7, 8, 10, 12 (two cases), 17, and 36 hours after the initial symptoms.

Fæces.—In Case 1 the bowels acted naturally every day for seven days. In Case 7 the bowels acted naturally on the first two days of an illness lasting six days. In Cases 2 and 5 some fæcal matter was passed after the invagination had taken place. In four cases out of sixteen, therefore, the bowels may be said to have acted after the initial symptoms which marked the onset of the intussusception.

A palpable tumour.—A tumour was felt in fifteen out of sixteen cases. The exception (Case 7) was a baby aged 4 months, who had been ill for six days. The abdominal distension was very great, and although the intussusception had advanced to about the level of the left pelvic brim, the tumour could not be palpated per abdomen, nor by the combined abdominal and rectal method. The tightness of the abdomen from intestinal distension, I think, prevented its being palpated. The diagnosis in this case was made from other symptoms. In the majority of cases the intussusception was readily felt at an opportune moment without the aid of anæsthesia. But in four cases it seemed impossible to obtain a relaxation of the abdominal muscles for a sufficient length of time to make quite certain that one was feeling a tumour underneath the muscle or merely palpating a local contraction of the abdominal muscles. In all four cases the results of palpation were very suspicious, and the only, and obviously therefore the right, procedure was to anæsthetise the child. This was not done until preparations were made so that, if the result of the examination were positive, the operation might straightway be performed. To anæsthetise a baby for the purposes of diagnosis, and an hour or more later to anæsthetise again, must materially add to the final shock and render the results of surgery less encouraging than if the anæsthetic for diagnosis and treatment be conducted at one and the same time.

The shape of the tumour has been, from time immemorial, compared to that of a sausage. This is quite fanciful. The shape of a sausage varies much and so does that of an intussusception. It is not the shape of the tumour, for many tumours in the abdominal cavity may, with a little imagination, be compared to that of a sausage, but it is more from other characteristics that the diagnostic import of the swelling comes into prominence.

To thoroughly appreciate the characters of the tumour formed by an intussusception some little time must be spent on the examination. In some cases it is perfectly obvious as soon as the hand is placed on the abdomen, but not so in all cases. The main features of the tumour of an intussusception are the alternate contraction and relaxation of which it is capable. When the hand is first placed on the abdomen nothing definite may be felt, but if an intussusception be present a little rubbing of the abdominal wall may so coax up a contraction of the gut that a tumour will be readily felt. In addition to this, whilst under examination the tumour may be displaced from place to place, and this independently of the actual mobility or pedunculation of the tumour. I have more than once, whilst the child is going under the anæsthetic, by a little firm pressure been able to in part reduce the intussusception, and been conscious, therefore, of its location in an area of the abdomen at some distance from its original position.

The intussusception may practically be situated in any region of the abdomen. In this series of cases there was no constant relationship between the duration of the illness and the distance travelled by the intussusception. In Case 1 symptoms had been present seven days, yet the intussusception had only advanced a little to the left of the mid-line, whilst in Case 4 the symptoms had only been present four and a half hours, and the intussusception was in the left lumbar region. In one case (Case 11) it was felt *per rectum* after thirty-six hours; in Case 7, on the sixth day it had only advanced to the left iliac region; in Case 16, after twenty-eight hours it had only travelled just to the left of the mid-line.

Diagnosis.

The diagnosis of an intussusception, speaking generally, turns on one point—viz. the presence of the characteristic tumour. This was felt in fifteen of the present series of cases. This, with pain, vomiting, and the passage of blood and mucus forms a unique clinical picture. Having felt the intussusception *per abdomen* I cannot see the object in making a rectal examination. This can only cause pain, excite peristalsis, and tend to force the intussusception farther along the bowel. It does not materially affect the ease of reduction or the prognosis whether the intussusception can be reached *per rectum* or not.

Of the other symptoms *pain, vomiting,* and the *passage of blood and mucus* by the bowel, if all occur together in a previously healthy baby, the diagnosis of intussusception is exceedingly suspicious. If we can rely on history as given by the parents, acute pain, judging by the behaviour of the child, seems in some few cases in this series to have been absent. But in these exceptions the fretfulness and occasional cries of the infant pointed to it being suddenly and abruptly the victim of some acute disorder. In addition to the sudden and unexpected "screaming" there is always noted a more or less equally sudden change in the appearance of the child. The child turns pale, looks very white, or its eyes look heavy, are some of the expressions volunteered by the mother. A recurrence of the "screaming fits," or an unnatural and increasing fretfulness and crying, or a very pronounced alteration in the aspect is generally what leads the mother to seek advice. Sometimes the passage of blood and mucus *per anum* is the sign upon which most stress is laid. The presence of this latter symptom is very important in the diagnosis, but its absence must not lead one to infer that an intussusception is not present. There is no constant time at which this appears; it may be quite an early sign, or very often it is a later one. In one case in this series (Case 15) it was absent, but this was an enteric invagination, and it would seem only too likely that this somewhat rare form of intussusception may often be lacking in this important sign. In several cases blood in the stools was a late sign, often so late that it must have been possible to have diagnosed the case before its presence if only an abdominal examination could have been made. It is useless, and worse than that, misleading, to give statistics of the presence or absence of blood *per anum* in intussusception. It would be present in nearly all, if not all, if sufficient time for its passage were allowed. Its absence in a suspected case should be entirely disregarded. I feel confident that in many cases a tumour might be palpated before any blood was passed *per anum*. The earliest case of intussusception which I have had the opportunity of examining was one of four and a half hours' duration. This same case was brought to the hospital two hours after the initial symptoms, and the intussusception was then easily felt. I have never had an opportunity of examining an earlier case than this, and cannot say if it would be possible to feel the tumour immediately after the initial symptom. The fact that the bowels may be opened naturally after the onset does not negative the presence of an intussusception, although, in the majority of these cases, no fæcal matter was passed according to history, yet in a small minority the bowels were said to have acted quite naturally. This, of course, it is quite natural to expect. These symptoms, therefore, play a very second-rate *rôle* in the absolute diagnosis of an intussusception. In one case only did I rely upon them. This case (Case 7) was not seen until the sixth day of the illness. So far as the pain, vomiting, and the passage of blood was concerned the history was typical; the bowels had acted on the first two days of the illness. The abdomen was very much distended, and this distension prevented the intussusception from being felt. In two cases I have recently seen, both healthy babies, three and six months of age, both were reported as becoming suddenly ill, crying with pain, turning pale, and vomiting. They both passed blood and slime by the bowel. In both cases the history was very suggestive of an intussusception, and the aspect of the infants confirmed this suspicion. The abdomens could be easily palpated and nothing was felt. So strong was the history that I examined under an anæsthetic, still with a negative result. In a baby, with the finger in the rectum, it is possible almost to examine the whole abdomen bimanually, and if an intussusception be present it must almost certainly be felt in this manner, unless the abdominal distension be very great, which is only so in cases of some duration. In these two cases I could not feel anything. As both babies were a little collapsed rectal salines were given. This brought away some further blood and mucus, and in twenty-four hours the babies were perfectly well. It is hardly possible to regard such cases as colitis; personally I should consider them as cases of intussusception reduced spontaneously.

TREATMENT.

Every case was operated upon as soon as it was seen. In no case was any other form of treatment, *e. g.* injection, considered. Having had no experience in the latter method of treatment, I am not in a position to discuss its merits, although I know well that by some it is the treatment at first adopted. If we may, with a small experience of only sixteen cases, draw conclusions, I may say that I never regret having performed immediate laparotomy without having had resource to primary inflation. In many of these cases reduction has been so easy that in all probability water injection would have cured without laparotomy. I cannot think the shock of a laparotomy and rapid reduction in uncomplicated cases is greater than that of the injection method of treatment. The duration of an intussusception is no guarantee of its ease or difficulty of reduction.

In Case 1 (symptoms of 7 days' duration) reduction was easy; in Case 4 (symptoms of 4½ hours' duration) some force had to be expended in the reduction; in Case 6 reduction was easy on the fourth day; in Case 9 attempts at reduction were unsuccessful after symptoms of 18 hours' duration, yet after 28 and 36 hours reduction was perfectly easy in Cases 16 and 9. The severity of symptoms do not accurately interpret the condition of the intussusception, and it is impossible to predict the condition of the latter. In no case was reduction prevented by adhesions, and, in fact, in no case were any adhesions found, not even in the cases which were resected on account of irreducibility; the irreducibility in these cases, and the difficulty in the final dis-invagination in some others, was due entirely to the swelling of the intussusceptum. Speaking generally, the double intussusceptions gave the most difficulty in the final reduction, particularly the ileo-colic variety. The serous coat of the bowel in an infant is very readily torn; this can happen from quite moderate and gentle pressure, and it would seem might easily occur from water pressure. The intussusception was readily reduced in many cases; in some cases the proximal inch or more gave a little difficulty, and the short length of intussusception must have been very difficult of palpation through the abdominal wall. It would have been very difficult to say definitely whether such cases were completely reduced if the parts had not been exposed.

In the earlier cases I made the incision in the mid-line of the abdomen, high or low, depending on the situation of the tumour. In the latter cases I have made the incision immediately to the right of the mid-line, more below than above the umbilicus, regardless of the position of the tumour. This incision I considered preferable, because by far the majority of cases commence in the region of the ileo-cæcal valve, and this part can be most readily drawn up through this incision, whereas if the incision be higher or more to the left of the mid-line it is not so easy to deliver the important proximal part of the intussusception through it. An incision just to one side of the mid-line is chosen so that two rows of deep catgut sutures may be inserted. The incision is about two inches or less in length. With two fingers in the wound the intussusception is traced round and easily unravelled. This may be completed entirely within the abdomen, and if so, the last part is drawn up into the wound and examined as regards its complete reduction, the condition of the walls, tumour, etc. If reduction cannot be entirely effected in this manner, the unreduced part is drawn out through the wound, and then, if possible, reduced.

In this series there have been four deaths. Of the fatal cases, in two the intussusception was reduced. In one of the latter (Case 6) the condition was desperate at the time of operation, the baby having been ill for four days. In the second (Case 14), although reduction was easy and symptoms had only been present seventeen hours, the baby never really rallied from the operation ; the baby was pale and wasted, contrary to the usual type who suffer from intussusception. In two fatal cases (Cases 7 and 9) I could not reduce the invagination. In both cases I resected. I chose this method in preference to the usual method of treating such cases (by removing the intussusceptum through an incision in the intussuscipiens), because the pressure I used to attempt reduction was greater than the bowel would stand ; the serous coat of the latter gave way and tore extensively and irregularly. End-to-end anastomosis was done, since both pieces of gut were provided with a mesentery, and their lumens did not appear to be very dissimilar in size. Both cases were rapidly fatal.

The treatment of these cases does not end with the completion of the operation. The latter is quite simple in uncomplicated cases. The most anxious time is the few hours following the operation. In the majority of cases some form of stimulation was given. Regular saline injections, adrenalin, and sometimes strychnine were the stimulants employed. Feeding was commenced at once, and great care has to be exercised in this at first. As soon as the immediate danger seemed to be over and nourishment was retained the baby was put to the breast again. In the majority of cases the bowels opened naturally within a few hours after the operation. If they did not a simple enema was given. Morphia was not given.

In many cases some blood was passed once or oftener at some hours after the operation. In the cases which recovered vomiting ceased almost at once after the operation. Very often there was no sickness whatever, but in a few cases vomiting was noted once or twice. Some rise in temperature after the operation was very common, and appears to be the usual thing. This has no origin in the abdominal wound, for in all cases this healed satisfactorily. This rise is noticed a few hours after the operation, and generally is only about 100°–101° F., but it may reach 102° F. It is a sudden rise and gradually declines. About the third day the temperature is normal again. No doubt the cause of this is some absorption from the bowel walls.

Case 1.—Male, aged 2 years and 3 months, a healthy child. Onset of illness quite sudden; earliest sign was that the child screamed out with pain in the abdomen ; that lasted a few minutes only. For six days the child had several similar paroxysms of pain of a few minutes' duration, and between these paroxysms seemed perfectly well. It took food well and had no vomiting; the bowels were opened naturally once every day, and the stools were normal. On the seventh day these pains became more frequent and more severe.

When seen on the seventh day of the illness the child was in great pain, frequently screaming out. The abdomen was a little full; an enema brought away a little fæces and blood-stained mucus. Temperature 96° F., pulse 100, *per rectum nil.* The paroxysms of pain were so frequent and severe that the tumour could not definitely be felt on account of the rigidity of the abdominal muscles. Under anæsthesia a tumour was obvious, running transversely from the right hypochondriac region across the umbilical plane.

Operation on the seventh day (?) *of illness.*—The intussusception was very loose and reduced with ease; it extended to left of transverse colon; there was very little œdema of the intussusceptum. The intussusception was of the ileo-cæcal variety.

On the following day the bowels acted naturally; the stools contained a little blood and mucus. The temperature for forty-eight hours after the operation varied from 99°–101° F., and then became normal. Bowels acted naturally daily, and after the first action the stools were normal. Uninterrupted recovery.

Case 2.—Male, aged 8 months; a healthy baby. Earliest sign was diarrhœa, and a few hours later some blood and mucus were passed in the motion, which also contained fæcal matter, and the child then became restless and irritable, frequently screaming out as if in pain. Vomiting was frequent, and commenced about the same time as the pain.

When seen, the child was pale and screamed frequently with pain. Temperature 96° F., pulse 100. The abdomen was perfectly lax in between paroxysms of pain. In the left iliac and lumbar regions a cylindrical mass was felt. *Per rectum* intussusception was just palpable, and some blood and mucus on examining finger.

Operation fourteen hours after the onset.—The intussusception was easily reduced; it was of the ileo-cæcal variety. The intussusception was much congested, and showed hæmorrhages in its walls; it reached to the descending colon.

After the operation there was no vomiting; the bowels acted naturally in thirty-six hours, and quite regularly afterwards. The first evacuation only contained some blood and mucus. Uninterrupted recovery.

Case 3.—Male, aged 1 year; a healthy baby. Illness commenced with "screaming" and "doubling himself up" with pain in the abdomen. A few hours later vomiting commenced, and continued at very frequent intervals until operation. He had a convulsion shortly after the onset of the illness. Blood was passed *per rectum* thirty-six hours after the onset, and was repeated several times; no fæces noticed. The abdominal pain persisted, as evidenced by the frequently repeated screamings of the child.

The baby looked very pale and ill with sunken face and much collapse. Pulse 150, temperature 96° F. The abdomen was quite lax and a tumour was easily palpable in the left lumbar and iliac regions.

Operation forty hours after the onset.—The intussusception reached as far as the left brim of the pelvis; reduction was easy at first, but the proximal portion was rendered somewhat difficult, partly on account of its being unable to be drawn outside of the abdomen from the shortness of the mesentery. After a little time reduction was accomplished. The intussusception was of the ileo-colic variety, commencing just above the ileo-cæcal valve, the small intestine prolapsing as far as the valve, and the latter then forming the apex of the invagination. During the operation the child was considerably collapsed and had to be stimulated freely.

The baby rallied well from the operation; vomited once shortly afterwards, and again a few hours later. Bowels opened with an enema a few hours after operation; no blood or mucus in the motion. The temperature rose four hours after the operation to 102·2° F., and gradually fell to normal in three days. The wound healed by first intention.

Case 4.—Female, aged 3 months; a healthy baby. The infant was quite well when put to bed, and in the morning the mother noticed some blood and mucus in the bed. Shortly before this the child cried, but not as if in any pain. She was fed shortly afterwards and at once vomited. Within two hours of the blood being noticed the baby was brought to the hospital. The baby looked ill. temperature 98° F., pulse 130. She vomited directly after some food, but was apparently in no pain. The abdomen was quite lax; an intussusception was felt in the left lumbar region. No fæcal matter was passed.

Operation four and a half hours after onset of symptoms.—The intussusception extended as far as the left brim of the pelvis; it was easily reduced to the proximal two inches, and the latter was reduced completely with a little more force. The intussusception was of the ileo-colic variety; it commenced just above the ileo-cæcal valve, the ileum prolapsing as far as the valve, and the latter then formed the apex of the intussusception. The appendix was very swollen and of a black colour, but retained its lustre; it was removed.

For twenty-four hours after the operation, the child was very ill; vomited frequently. Saline infusions were given regularly, stimulants hypodermically. During the first twenty-four hours blood and mucus were passed *per rectum* on three occasions, but without fæcal matter in spite of an enema. After this time sickness ceased, the bowels opened naturally on the second day, and the child made a speedy recovery. The temperature never exceeded 99° F.

Case 5.—Male, aged 9 months. A healthy baby until three weeks previously, and during these weeks had suffered from diarrhœa. Onset of intussusception was sudden, with screaming, which became intensified on pressure on the abdomen. The fits of screaming continued with increasing severity and frequency, and about seven hours after their onset vomiting commenced and blood and mucus were passed *per anum*. The latter signs continued until operation. The bowels were said to open once shortly after the pain began. The baby was only a little collapsed, and in between the intervals of pain slept peacefully. Temperature 101·2° F., pulse 120. The abdomen was quite lax and free from tenderness; an intussusception was felt in the right lumbar and epigastric regions.

Operation ten hours after onset of acute symptoms.—The intussusception was readily reduced until the proximal three inches; more force was required here, and reduction was then completely accomplished. The intussusception was of the ileo-colic variety; the ileum, about three inches above the ileo-cæcal valve, had prolapsed to the valve, and then the valve formed the advancing part to the left of the transverse colon. The mesenteric glands were very swollen.

There was very little collapse following the operation; temperature normal throughout convalescence. The bowels opened naturally in a few hours without blood or mucus in the stools. Uninterrupted recovery; the diarrhœa ceased.

Case 6.—Female, aged 8 months; a very healthy baby. The first symptom noticed was the passage of blood and mucus *per anum*, which occurred four days before admission. Vomiting occurred shortly afterwards. The baby continued to be sick after every feed.

Blood and mucus were passed many times a day for four days, but no fæcal matter was noticed in spite of aperients, which had been freely given. Throughout the illness the baby was very fretful, but never once screamed out with pain, and in fact the peculiarity of the case was the absence of abdominal pain as judged by the symptoms.

The baby looked very pale and ill; temperature 97·2° F., pulse very rapid and hardly countable. The abdomen was quite lax and a tumour was easily palpable in the left iliac region. *Per rectum* an intussusception was felt reaching nearly to the anus.

Operation on fourth day of illness.—After opening the abdomen the intussusception was readily felt, but could not be reduced as the lower end could not be reached through the abdomen. The assistant's finger in the rectum commenced the reduction, which was then readily completed with two fingers in the abdomen. The invaginated gut was only moderately swollen, and thus offered no impediment to reduction. The intussusception was of the ileo-cæcal variety, but the caput cæci was the last part to unfold.

The collapse continued after the operation, and in spite of infusion and stimulating injections death occurred nine hours later. The baby was sick several times after the operation, and practically retained no nourishment. The temperature rose to 100·8° F.

Case 7.—Female, aged 4 months; previously a healthy baby. Illness of six days' duration; sudden onset with screaming and vomiting. The screaming fits increased in severity and frequency and vomiting was very persistent. The baby became very collapsed and ill. The bowels opened naturally the first two days of the illness, but no motion was passed later. Blood and mucus were passed *per anum* on the sixth day of the illness.

The baby was very ill and collapsed. Temperature 98° F., pulse 148. The abdomen was very distended but quite soft, and no tumour could be felt; it was generally resonant; intestinal coils were not visible. *Per rectum, nil.*

Operation on sixth day of illness.—Under anæsthesia no tumour was palpable, although from the history it was pretty clear that an intussusception was present. After opening the abdomen the small intestine was very distended, and an intussusception was felt behind many coils of intestine reaching to just above the level of the pelvic brim. The advancing part was easily reduced, but the proximal four to five inches could not be reduced. On attempting this with only moderate force the bowel was ruptured, with resulting fæcal extravasation. A rapid resection with end-to-end anastomosis in two layers was performed. The ileum was anastomosed to the colon, each being provided with a mesentery and having approximately equal calibres.

During the operation there was considerable shock and death occurred shortly afterwards.

The intussusception was apparently gangrenous and had given way in several places; it may have been from my pressure. It was of the ileo-cæcal variety. The extravasation of fæces noticed at the operation was from one of the holes in the intussusceptum, occurring at a site which had been reduced at operation.

Case 8.—Female, aged 3 months; a healthy baby. Onset sudden, with screaming fits of a few minutes' duration. Vomited an hour or so later. Screaming and vomiting continued, and the paroxysms of pain became more frequent, and of longer duration. Vomiting was very frequent. Blood and mucus were passed for first time shortly before operation, and then three times in rapid succession.

The baby was very collapsed. Temperature subnormal. Pulse very rapid and hardly countable. A tumour was felt in a transverse direction beneath the left rectus.

Operation eighteen hours after onset of symptoms, after stimulation with strychnine.—The intussusception reached to just beyond the splenic flexure; it was easily reduced save for the proximal inch or so, and considerable force had to be exerted here before successful reduction was accomplished. The last part to be unfolded was the caput cæci, the intussusception being one of the ileo-cæcal region. After the operation there was no vomiting, but considerable collapse for twenty-four hours. This yielded to subcutaneous infusion. Blood and mucus were passed once or twice during the first few hours. Uninterrupted recovery.

Case 9.—Male, aged 4 months; a healthy baby. Onset sudden, screamed with pain. Screaming fits frequently repeated. Six hours later he vomited, and shortly afterwards passed blood in the motions. Vomiting and diarrhœa, with passage of blood and mucus persisted. Fæcal matter absent. Aspect fairly good for an intussusception. Temperature 96° F.; pulse 150. The abdomen was somewhat full, but quite lax: a swelling was felt below and to the left of the umbilicus. *Per rectum, nil.* He vomited twice, and passed blood and mucus twice just before operation.

Operation eighteen hours after onset.—The intussusception reached as far as left pelvic brim: it was easily reduced with exception of last two inches. This was withdrawn from abdomen, and by pressure and gentle traction no impression was made. On firmer pressure the intussusception could not be reduced, but the serous coat of the sheath was torn. This rent increased as more pressure was exerted. The only possible course seemed to be resection. The bowel above and below was clamped with forceps, and the intussusception excised with a portion of mesentery. The vessels in the mesentery were ligatured, and an end-to-end anastomosis was performed, with two layers of sutures. Although the anastomosis was one of ileum to colon, there seemed no great disproportion in the calibre of the two portions of bowel, and each one was provided with a complete serous investment, and hence the end-to-end was chosen in preference to the lateral anastomosis.

There was considerable collapse during the operation, and strychnine hypodermically was administered. Infusion with saline and adrenalin was performed every four hours until death, and after each infusion considerable improvement in the child's condition was noticed. Vomiting continued after the operation as before. Diarrhœa also continued with blood and mucus in the stools until death; an enema was given which only brought a little mucus away. There was apparently no pain after the operation. The temperature rose to 104·8° F., and varied between this and 102° F. until just before death, which occurred twenty-seven hours after the operation.

Post-mortem.—A little clear serous fluid in the peritoneal cavity. Around the suture line was some matted lymph, glueing the neighbouring intestinal coils together. The suture line seemed secure. There was no peritonitis nor obstruction. The colon contained a little blood, and its mucosa was inflamed.

The intussusception could not be reduced after its removal. The cause of irreducibility was entirely due to the swelling of the intussusceptum; adhesions were hardly noticeable. The apex of the invagination was the ileo-cæcal valve.

Case 10.—Male, aged 9 months; a healthy baby. Onset sudden; about one and a half hours after a feed he woke up screaming with pain; he was again fed and was at once sick. The pain lasted about ten minutes, and during the night had frequent shorter paroxysms of pain. He was fed frequently, but vomited after each feed. About twelve hours after the onset he passed some blood and "jelly-like stuff" *per anum*. A rectal examination a little later caused more blood and mucus to be passed.

When seen the baby was pale, but comparatively free from pain. Temperature 98·6° F., pulse 140. The abdomen was lax; a cylindrical tumour was palpable in the right hypochondriac and epigastric regions reaching to mid-line. *Per rectum, nil.*

Operation eighteen hours after onset.—The intussusception was reduced without difficulty. It was of the *ileo-colic type*, and commenced in the ileum about two inches above the ileo-cæcal valve, and this invagination had travelled as far as the valve, and then the cæcum became invaginated to the transverse colon. The invaginated ileum was thick and œdematous, as also was the cæcum, but much less so.

The bowels opened naturally after twenty-four hours. The temperature following the operation was scarcely raised above normal. Uninterrupted recovery.

Case 11.—Male, aged 11 months; a healthy baby. The bowels had been loose for a few days, but this hardly amounted to diarrhœa. The onset was sudden, the child screaming out with pain, and on touching the stomach the child screamed the more. He vomited at the onset of the pain, and very shortly afterwards passed some blood *per anum*. The attack of pain lasted about half an hour. The baby then seemed better and slept during the night with occasional screaming fits of pain; he vomited after each feed. On the following day he had several short attacks of pain and vomited frequently, and on several occasions blood was passed *per anum*. The mother noticed a prolapse *per anum*. No proper motion had been passed.

When seen the baby was very pale, and had a "pinched" face. Temperature 98·4° F., pulse 128. The abdomen was a little distended and an intussusception was felt in the left iliac region; this was easily felt low down in the rectum.

Operation thirty-six hours after onset.—The intussusception was easily reduced; the parts were only very slightly congested, there being merely a little œdema of the apex of the intussusception. The intussusception was of the *colic* variety, its apex being about two inches beyond the ileo-cæcal valve. The whole large intestine was provided with a very lengthened mesentery.

The temperature was elevated for forty-eight hours after the operation, and then became normal. The bowels opened naturally on the second day. Uninterrupted recovery.

Case 12.—Male, aged 3 months; a healthy baby. Suddenly commenced screaming, apparently with pain. He was fed and at once vomited. The paroxysm of pain lasted a few minutes, and then the baby was quiet. The screaming fits recurred frequently; he vomited several times. No blood nor mucus was passed. The bowels had not been opened. The baby was pale and appeared in some pain. Temperature 96° F., pulse 130. The abdomen was easily palpated, and a tumour was felt in transverse direction at the level of the umbilicus. *Per rectum, nil* felt; some blood on the examining finger.

Operation nine hours after onset.—The intussusception reached to the left of the transverse colon; it was easily reduced, and was of the ileo-cæcal variety, the caput cæci being the last part to unfold.

After the operation no vomiting. Temperature 100° F., a few hours later, which soon became normal and remained so. The bowels opened naturally in a few hours, with some blood and mucus and fæcal matter. Blood was passed twice after the operation. Good recovery.

Case 13.—Female, aged 5 months; a healthy baby. For two days had had some diarrhœa and "green" motions. The baby suddenly became very fretful and irritable, and began to cry frequently as if in pain. She vomited after every feed. The crying fits continued. Blood was passed *per anum* eight hours after the onset of the illness, but fæcal matter was absent. She was somewhat collapsed, but not markedly so. Temperature 97·8° F., pulse 120. She vomited once after admission and passed blood on one occasion. The abdomen was lax and a tumour was easily palpable to the right of the mid-line.

Operation eleven hours after onset.—The intussusception travelled as far as the commencement of the transverse colon; it was very easy of reduction and was of the ileo-cæcal variety.

No vomiting after the operation. Bowels opened by enema a few hours after the operation, with fæcal matter and blood; afterwards they opened naturally without blood. Temperature never rose above 99° F. Uninterrupted recovery.

Case 14.—Male, aged 1 year 2 months. A somewhat wasted baby, but no history of any definite illness; no diarrhœa, and the bowels said to have been always regular, acting two or three times a day. For a few days was said to have been out of sorts, would not take food and vomited once or twice. He suddenly became very fretful and commenced screaming. The screaming fits, accompanied by drawing up of the legs, were frequently repeated. Blood and mucus were passed twelve hours after the first paroxysm of pain; fæcal matter was absent. He had vomited several times.

A pale, feeble baby, with some collapse. Temperature 97·6° F., pulse 120. The abdomen was difficult of examination as the child was more or less continually screaming with pain. There was a suspicion of a tumour in the umbilical region. Under anæsthesia a definite tumour was felt lying transversely.

Operation seventeen hours after onset.—The intussusception passed to the left of the transverse colon; it was of easy reduction. The invagination was of the ileo-cæcal variety, the caput cæci being the last part to become expressed.

The child vomited once after the operation; the temperature rose to 102° F. and gradually fell. An enema was given a few hours after the operation and the stool contained blood. Collapse continued and death occurred in about ten hours after the operation.

Case 15.—Male, aged 3 years. The child was suddenly seized with acute abdominal pain and vomiting. The pain was distinctly paroxysmal and vomiting occurred at each paroxysm of pain. Upon examination the child looked ill and the paroxysms were becoming more frequent. A doubtful tumour was felt to the right of the umbilicus. Temperature 97·6° F., pulse 120. The bowels had been confined. There was no history of any blood passed *per anum.* Under chloroform a distinct tumour was felt in the right iliac and lumbar regions of the abdomen.

Operation about fourteen hours after the onset.—The intussusception was one of the small intestine, the distal end having passed as far as the cæcum. The origin was in a diverticulum, which itself was the first part to become invaginated. The reduction was easy; the diverticulum was removed. The child made an uninterrupted recovery.

Case 16.—Male, aged 6 months; a healthy baby. The child suddenly screamed with pain and turned very pale. During the night the baby was very restless, but did not scream out with pain; he was sick for the first time about three hours after the onset of the pain, and after this repeatedly vomited until operation. Blood was first passed *per anum* about ten hours after the onset, and once again in large quantity.

The baby was somewhat pale, but did not look very ill. Temperature 97·6° F., pulse 140. There was an indefinite swelling in the right hypochondriac and epigastric regions, but it was difficult to obtain a sufficient relaxation of the abdominal muscles to make certain of the nature of the swelling.

Operation twenty-eight hours after the onset of the symptoms.—Under anæsthesia the intussusception was obvious; it had travelled a little way along the transverse colon, and was reduced with ease, the caput cæci being the last part to unfold; it was, therefore, of the cæcal ileo-cæcal variety.

The child vomited slightly twice after the operation. The bowels were opened with an enema twelve hours later; no blood nor mucus in the stool. The temperature rose to 100·8 ° F. a few hours after the operation, and gradually became normal on the second day. On the third day chickenpox developed and he was discharged from the hospital.

ERYTHRODERMIA DESQUAMATIVA (UNIVERSAL DERMATITIS OF CHILDREN AT THE BREAST).

By Dr. Carl Leiner, Vienna.

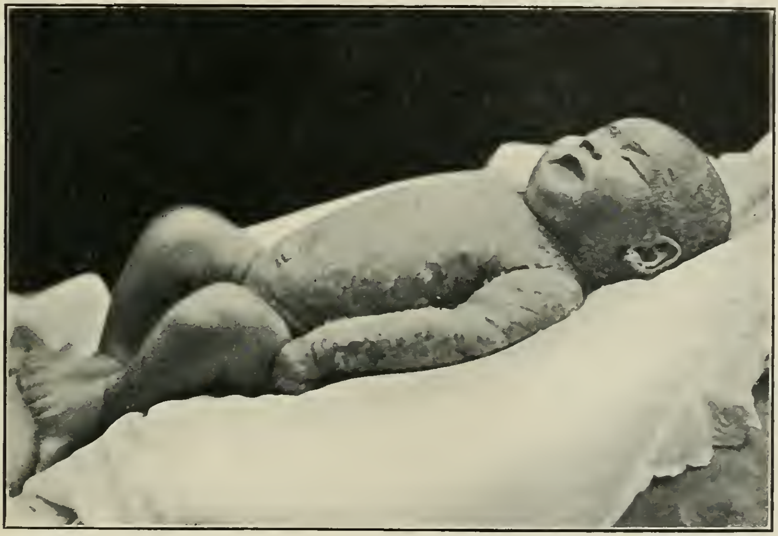
I wish to draw attention to a peculiar disease of the skin, which spreads itself all over the body, but which, however, must be distinguished from the specific forms of eruptions in infants, from the dermatitis exfoliativa Ritter, from the slight form of this disease the pemphigus contagiosus neonatorum, and also from the various other diseases of the skin, eczema, prurigo, etc.

This dermatitis, about which I am reporting, presents a special type for itself, and it is of the greatest importance to be able to recognise it, for with few exceptions it only attacks children at the breast. This disease, far from being harmless, very often is even extremely dangerous for the infants, and death from this form of dermatitis is not at all infrequent.

During the last five years I have made it my special task to study this form of dermatitis, and during this time I have closely observed forty-three cases of it in the Carolinen Children's Hospital in Vienna. Forty-one cases were in children nourished at the breast and two with the bottle. Twenty-eight were cured and fifteen died from the disease.

As a rule the children are brought for advice when the illness is already at its height, that is to say, at the end of the second or the beginning of the third month of life, seldom later. The children then present the picture of a universal dermatitis, which in all these specific cases bore the same aspect. The head presents the same appearance as in cases of seborrhœa. It is covered like a cap with thick yellow fatty scales and crusts, which may be easily removed from the slightly inflamed, but in no wise ulcerated skin. The hair is sparse, on some spots matted. The eyebrows also present the same appearance as the scalp.

The rest of the face is almost entirely slightly inflamed and covered with thin yellow scales. Only the tip of the nose and the nostrils and the neighbouring parts of the cheek still bear a normal appearance, and it is only at the later stage that these parts are attacked by the eruption. The trunk is intensely red and at first covered with whitey-grey opaque scales, which later become lustrous. They may be easily removed from the slightly inflamed epidermis. The dorsal aspects of the extremities are more thickly covered with scales than the flexor. The hands and feet are red, but only in circumscribed spots. The nails also are affected by the disease and show various deformities, transverse and longitudinal grooves and small prominences and cavities of irregular form. The nail-bed is often hyperkeratotic, causing an abnormal convexity of the nails. In the folds of the skin and on the flexion side of the joints no scales are formed. Here the skin is of a dark red colour and œdematous. Only in the depths of the folds a covering of a dirty white



colour is to be seen. Examination of the other organs proved them to be quite normal. The glands are only slightly swollen, about the size of a cherry-stone; suppuration of the glands never occurs. The general health of the child is quite good, and the sleep is but little disturbed, this being due to the absence of itching. At this stage I could find no increase of temperature. On examination the urine proved quite normal. The mucous membrane of the mouth showed no remarkable changes. Changes are only to be found at this stage in the digestive organs and almost in every case, so that this seems to be one of the symptoms of this particular skin disease.

In the majority of the cases the further course was benign as the disease was cured in a few weeks. The hyperæmia of the skin, the intensity of the desquamation slowly ceases, the scales become thinner and smaller, and the skin gradually assumes a normal character. The pathological changes remain a long time in the folds and on the scalp. Even when the skin disease takes a favourable course the general condition of the little patient's health is affected unfavourably by the illness. It loses weight, and this often very considerably. And this condition may last for some time, even for some months, till the child recovers and a regular and normal development is to be remarked.

I have already mentioned that the disease cannot always be cured; about one third of the patients die from it.

In spite of continuing the breast feeding the intestinal troubles come more and more to the front, the decrease in weight becomes more and more evident, so that the little sufferers are so terribly changed that they do not bear the slightest resemblance to the normal child at the breast.

The little one is emaciated and appears as if suffering from a severe illness. It is in a state of collapse, the face and extremities are of cyanotic colour, and the former is drawn with pain. The extremities become hypertonic; the whole skin is so dry that it often looks like parchment, and is covered with thin dry scales and traversed with fine rhagades. These rhagades are most severe round the mouth. On account of the infiltration of the lips and dryness of the skin the act of suckling often becomes very difficult or even impossible. Continual increasing cachexia and fever, associated with diarrhœa, soon cause death.

The post-mortem examinations proved that, besides the pathological changes of the skin, there is always a severe degeneration of the muscle of the heart, fatty degeneration and infiltration of the liver, and catarrhal changes of the intestinal mucous membrane.

Throughout the system of the lymph nodes there are no remarkable changes. The possibility of a "status lymphaticus" has never come under discussion.

The skin disease under notice consists of a slight and an universal inflammation of the cutis and a continuously repeating desquamation. We know that such changes of the skin can develop in the various eruptions, especially when the part affected becomes irritated by therapeutic means. We recognise these eruptions as secondary, because they appear on a part of the skin already affected by the primary disease.

Thanks to the researches of French authors (Brocq, Vidal, Besnier) we are also acquainted with the primary erythrodermia, whose chief characteristic symptoms consist of a slight inflammatory change of the skin—a dry desquamation and a generalisation of the process.

To this group of primary dermatitis the French medicals include the pityriasis rubra Hebræ, the erythema scarlatiniforme recidivans, and the dermatite exfoliatrice idiopathique.

To decide the question, if the cases under discussion are primary or secondary, it is necessary to inquire into the earliest symptoms of the illness. I know from my own observations that the disease begins almost always at the end of the first or in the beginning of the second month of life, but not always on the same region. In the majority of cases the dermatitis begins on the head, on which seborrhœic changes are quickly developed. In other cases it comes to the eruption of erythematous spots on the trunk, which spread over the whole body like an erythema. In but very few cases have I found that the first eruption consists of small non-itching papules covered with a fine scale, which often take the form of round groups from which the redness of the skin begins to extend. These efflorescences fuse in a short time in the general redness of the skin.

All these clinical symptoms lead me to the supposition that the disease is a primary one. An important factor for this supposition is found in the histological examinations of the different cases. The histological changes are not of a high degree; they consist especially in a dilatation of the vessels in the papillary region and a slight augmentation of leucocytes in the same part, and a slight inflammation and œdema of the epidermis, and a parakeratosis.

The result of the histological examinations in combination with the clinical led me to the conclusion that this dermatitis is a special type, which may be called "Erythrodermia desquamativa."

Complications in connection with the skin are very seldom to be seen, probably owing to the continual desquamation, which prevents a deposit and growth of micro-organism on the skin.

In reference to ætiology we must first answer the question whether exogenous or endogenous reasons cause the dermatitis.

In regard to exogenous causes we must first take micro-organisms into consideration, the skin being, as we know, often of ætiological consequence to different inflammations (dermatitis exfoliativa Ritter and pemphigus contagiosus neonatorum, ecthyma gangrænosum, etc.).

For the bacteriological examinations I took scales of different cases and from different regions, and I examined them stained and in culture. In almost all the cases I found a quantity of *staphylococcus albus, bacillus pseudo-diphtheriæ,* and more rarely *staphylococcus aureus* and *bacillus pyocyaneus.* The presence of the last-mentioned bacillus could be seen microscopically on the humid green coloration of the linen and especially in the folds.

In the histological sections no micro-organisms could be found.

All these factors speak against any causal exogenous importance of micro-organisms.

Neither could I find any reason to consider this dermatitis as a septic erythema. The normal temperature, the chronic course of the disease, and the negative results of the bacteriological examinations of the blood speak against this supposition ; also a chemical irritation of the skin by medicaments cannot be taken into consideration, while I could often perceive the development of the disease apart from any medical treatment.

The clinical observations, the form of the commencement in erythematous spots, the quick generalisation, and last, but not least, the histological results, led me to the conclusion that the cases may perhaps be an autotoxic erythema, probably being in connection with the intestinal troubles, which were always present. I cannot with certitude say if, besides the intestinal troubles, also the quality of the nourishment itself—the mother's milk—causes the disease. The chemical analysis shows no difference in the fat of the milk (3·4–4 per cent.). Notwithstanding this, however, two important factors show that the cause of the disease really lies in the mother's milk. Firstly, the therapeutic effect of the change of the food ; and secondly, that a twin nourished by the mother was attacked by the disease, and in another family two succeeding children suffered from this form of dermatitis.

The differential diagnosis of all those skin diseases which may be attended by universal diffusion must be taken into consideration.

First comes the dermatitis exfoliativa Ritter. The differential diagnosis is here of the greatest importance, because in medical literature single cases have been described as " dermatitis Ritter," but which exactly correspond to the disease at present under discussion.

Here may be taken into consideration the cases which Luithlen mentions in his paper ('Archiv für Dermatologie,' Bd. 47), where he also describes the histology of the so-called dermatitis Ritter.

Also in Pfanndler Schlosmann's text-book, the illustration on Table 59, which is designated as a slight case of dermatitis Ritter, appears to me like the cases under discussion. We know, according to Ritter's excellent clinical description, that the dermatitis exfoliativa begins at first with a redness round the mouth, from whence it spreads over the entire body. The hyperæmia, or better, the inflammation, can attain such a degree that large parts of the epidermis may be directly undermined.

An important symptom of that disease is the slight exfoliation of the epidermis (the epidermolysis) from which the whole body is often attacked, so that the children bear the appearance of having been scalded. When the children pass this period the skin becomes dry and is covered with fine scales and crusts, and slowly regains its normal appearance. The course of the disease is an acute one; from the first symptoms till the recovery seven to ten days elapse. The most important symptoms of the disease are, according to Ritter, the swelling, the maceration, and exfoliation of the epidermis.

Not a single one of these symptoms is present in the disease I am describing. Still more important differentiations between my cases and Ritter's disease are the seborrhœic changes of the scalp, which, according to Ritter, are never present in his dermatitis. Also the course of these forms of dermatitis is different, it being acute in Ritter, while in mine it is chronic.

A second disease for differential diagnosis is to be taken into consideration, viz. eczema. Differentiation is not easy, especially when single spots are taken into account. The seborrhœic changes on the scalp are the same as are usually seen in the different forms of eczema. Also the changes in the folds appear like eczema intertrigo.

But at these parts we can also observe the itching papule at the margin, which is always present in eczema intertrigo. In reference to the entire aspect of the disease must be mentioned as differential diagnostic symptoms the absence of the itching eczema papule and the histological result in my cases.

Psoriasis is another disease which must be taken into consideration. But this complaint is very rarely present in such young children. A further differentiation is the fact that in cases of psoriasis the scales are dry and have a silver shimmer, and by removal of the scales fine bloody spots appear on the lesions.

With regard to the therapy the attention must first be directed to the slight inflammation of skin.

Usually it is best to begin with a warm bran bath of 28°–26° R., in order to remove all fat and dirty deposits which may have accumulated in folds of the skin and of the joints. The folds are then covered with gauze lubricated with olive oil. On the scalp and face are put a mask of clean vaseline. Every day it is necessary to change the covers, clean the skin with oil or benzine tampons, and repeat the bran bath from time to time. When the desquamation ceases zinc oil bandages and zinc ointment on the extremities are used. In the folds an endeavour is made to change the wet catarrh into a dry one with 1 per cent. pôultice of resorcin.

In cases where the seborrhœa was very severe 2 per cent. ointment of sulphur was sometimes used.

With this external treatment was always combined an internal one, which consisted in regulating the diet. At first a strict interval between the meals was ordered, even lengthening it to four hours. Also, in slight cases, one or the other meal was replaced by an artificial one, which consisted of rice-water or butter-milk.

In severe cases when the intestinal symptoms were of primary importance an attempt was made to influence the intestinal catarrh by a strict regulation of the diet and calomel internally. When the results were unfavourable, if possible, the natural food—the breast—was replaced with an artificial one, using rice-water with milk or butter-milk. By this combined treatment the children are prevented from passing to the highest stage of the disease, from recovery of which there is very little hope.

When children are brought for treatment in this stage of the disease it is necessary to be particularly careful with the therapeutic treatment in order not to injure the little patients. Bran or other baths are then *not* to be recommended; firstly, because refrigeration after it may prove dangerous to the baby, and secondly, because the contact of the rhagades with water is very painful.

In such cases the child is well covered with oil or indifferent ointments, for the nourishment of the infant is of primary importance. Not seldom has it happened that the patient is unable to draw nourishment from the breast owing to the rhagades and infiltration of the skin on the lips. In such cases attempts must be made to nourish the child with the spoon or by nasal feeding.

In recapitulating the contents of my paper I must reiterate that my dermatitis, named erythrodermia desquamativa, is a peculiar universal skin disease, which consists of a slight inflammation of the whole cutis, a desquamation of the epidermis and a seborrhœa of the scalp.

This dermatitis is a real inflammation of the skin of the first few months of life, which has a peculiar interest, because it very rarely attacks other than suckling children, who often fall a sacrifice to this disease.

The ætiology is not yet quite clear. Probably the condition is an autotoxic erythema, which occurs in connection with the intestinal troubles. This dermatitis is to be carefully distinguished from the dermatitis exfoliativa of Ritter.

BRIEF NOTES ON SOME ACUTE AFFECTIONS OF THE LUNGS IN CHILDREN.

By Theodore Fisher, M.D., F.R.C.P.,
Assistant Physician to the East London Hospital for Children.

When working in the post-mortem room appearances are met with which may be of some interest, or even of importance, that are not frequently referred to in works on medicine, on if referred to are so described as to lead one to think that they must be more rare than is really the case. Such, perhaps, may be true of some of the conditions mentioned below.

The first appearance to which attention may be drawn is of frequent occurrence. It is *a strip of collapse* running down the posterior part of the lower lobe of the lung, and generally affecting also a small portion of the upper lobe. It is seen in acute affections such as bronchitis and broncho-pneumonia, and perhaps in cases of diphtheria where associated broncho-pneumonia is slight in degree. The collapse of the lung possibly is consequent upon the flexible character of a child's ribs. While the child is lying in bed upon its back the hinder portions of the chest wall under the hampering influence of the weight of the body must expand very little. The reverse is the case where the chest wall is given free play. Its anterior and upper parts are not only free to move, but the accessory muscles of respiration exert traction upon them in cases of difficulty of breathing. The lung substance beneath is then not only aërated, but over-distended, and what is known as acute emphysema develops. The collapsed portion of the lung at the back of the chest unfortunately does not often remain as collapse. In the majority of instances broncho-pneumonia develops within it. The possibility of the existence of the strip of collapse which may become affected with inflammatory consolidation is not therefore without its interest from the clinical standpoint in acute affections of the lung in children.

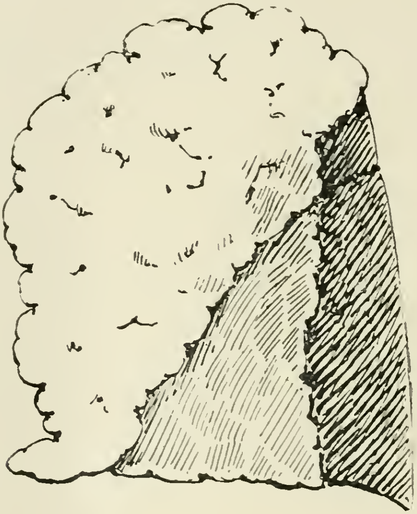


FIG. 1.—A rough sketch representing the strip of collapse that is frequently seen occupying a section of the posterior part of one or of both lungs in acute affections of the lungs in children. The anterior half of the lung is in a condition of acute emphysema.

Another condition which may be worthy of mention, because in my experience it has not proved to have been so very rare, is *acute bronchiolitis.* In one case the appearance of the lung was very remarkable. Both lungs of a child, aged 19 months, in external aspect closely resembled lungs affected with acute miliary tuberculosis. The pleural surfaces were studded with what appeared to be grey miliary tubercles, and almost as thickly as lungs which are sometimes crudely described as being "stuffed with tubercle." On section of the lung these grey tubercles proved to be dilated bronchioles. No broncho-pneumonia could be detected, and there was very little secretion in any of the bronchial tubes. In spite of the absence to the naked eye of evidence of inflammation, microscopical sections showed inflammation of the bronchioles, with small-celled infiltrations of their walls, and very limited broncho-pneumonia around. In another case occurring in a boy, aged $2\frac{1}{4}$ years, consolidation of one lung was extensive. Here also, however, the dilated bronchioles looked like small and medium-sized grey tubercles. Scattered amongst them were dark spots which resembled pigmented patches of fibrosis. Microscopical sections did not show fibrosis in the dark areas, but there were many cells containing pigment granules. Some of these cells were in lymphatic spaces around the blood-vessels, but others were in the consolidated alveoli. It may be mentioned that I have seen extensive dilatation of the bronchioles as early as the age of six months.

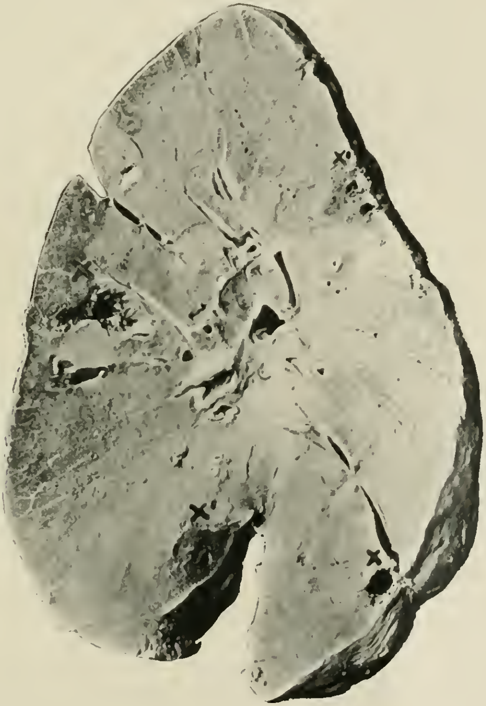


Fig. 2.—A section of the left lung of a child, showing small, black-walled cavities (x). At the points marked x^1 are dark emphysematous areas, with a small cavity in the centre. In the opposite lung very large cavities with dark walls were present. The lung containing these large cavities was not preserved as a specimen because after it had been cut open it could no longer be recognised as a lung, the destruction was so great. Over large areas only the pleura remained.

Although broncho-pneumonia that is not definitely secondary to some affection due to pus-forming organisms rarely breaks down, it does so occasionally—that is to say, in a case of broncho-pneumonia which clinically appears to have been of the nature of *primary broncho-pneumonia,* in the post-mortem room the consolidated areas of the lung *may present spots of suppuration.* In one interesting case, occurring in a healthy-looking boy, aged 16 years, both lungs were studded from apex to base with what superficially appeared to be yellow tubercles. Most of these pale spots were small patches of broncho-pneumonia, but the larger amongst them had broken down into pus, leaving only around a narrow rim of consolidated lung tissue. Within five weeks of the occurrence of this case three other cases, in which small abscesses were dotted through the lungs, were seen in the same post-mortem room. When in one post-mortem room several cases of similar kind are met with in the course of a few weeks, it is reasonable to conclude that many cases upon which no post-mortem examination is made are probably dying of the same affection in the neighbourhood. Allowing this to be true, and that there were many other cases of the same kind, it would appear that a variety of broncho-pneumonia which breaks down into pus may occur as a localised epidemic. It should be stated that two of the four cases were in adults.

Another variety of broncho-pneumonia is one in which *dark-coloured areas containing gas* are formed. I have seen three instances of this. The following is an outline of a case: A girl, aged 6 years, was supposed during life to be suffering from lobar pneumonia. After death the right lung presented an extraordinary appearance. Three large dark, almost black areas were seen occupying its substance, one in the upper lobe and two in the lower. On cutting into these areas the lung substance was seen to have disappeared, only fibrous bands being left. The walls were composed of emphysematous lung substance of blackish-brown colour. About half the normal structures of the lower lobe had completely disappeared. There was virtually no consolidation in this lung, but the left lung was almost solid throughout owing to the presence of confluent broncho-pneumonia. Three or four small cavities, with black walls like those of the large cavities in the right lung, were, however, present. There was no offensive smell, such as occurs in gangrene of the lung. The only contents of the cavities in either lung was a little altered blood. There was no trace of pus. Cover-slip preparations showed the presence of numerous, rather large, square-ended bacilli. None were encapsuled. The bacillus grew anaërobically, but did not form gas in glucose or saccharose agar. Another precisely similar appearance of the lungs was seen in association with broncho-pneumonia, secondary to middle-ear disease, in a boy, aged 14 years. The black-walled cavities varied from the size of a walnut to that of a pea. Cover-slip preparations showed a bacillus similar in appearance to that mentioned above, which stained by Gram's method. It did not form gas when grown in glucose and saccharose agar. The third case, curiously enough, occurred in association with acute miliary tuberculosis of the brain and lungs in a girl, aged 7 years. Here a bacillus of the same appearance was present, and there were also encapsuled diplococci.

The above notes are extremely cursory, and refer to a few conditions of the lung only from the post-mortem standpoint. Although of no scientific value they may be of some interest to those who may have opportunities of examining the lungs of children after death.

AN UNUSUAL CASE OF ACUTE LEUCOCYTIC PLEURO-PNEUMONIA, WITH EXTENSIVE FIBRINOUS PLUGS VISIBLE TO THE NAKED EYE IN ENLARGED LYMPHATICS.*

By George Carpenter, M.D.(Lond.),

Chairman of Council of The Society for the Study of Disease in Children; Membre Correspondant de la Société de Pédiatrie de Paris; Physician to the Queen's Hospital for Children.

Susannah O—, aged 9 months, was admitted into the Queen's Hospital for Children on February the 1st, 1908, with the statement that she had been quite well until the day previous, when she retched but was not sick. Sickness, however, appeared the following day, the date on which she came into hospital. She was delicate at birth but lately had been stronger. The family history was satisfactory.

When admitted into hospital she was a fine, chubby child, with rapid respiration (64 to the minute) and a pulse-rate of 158 to the minute. The right apex was dull to percussion both back and front, and there was loud tubular breathing over this area and bronchophony; the breath-sounds elsewhere were vesicular. The temperature was 105° F.

The following day, although the temperature had fallen to 103° F., she was desperately ill. At 10 a.m. she became collapsed and she died the same afternoon.

Post-mortem.—Heart normal, patent foramen ovale; a little fluid in the pericardium. The spleen was somewhat enlarged, soft and congested; all the organs were free from tubercle.

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* Read before The Society for the Study of Disease in Children, March the 20th, 1908.

Lungs.—The right upper lobe was solid and was covered with a thick deposit of yellowish-white lymph; part of the solid lung was red and part was pale. But the most striking feature was numerous yellowish-white areas scattered over the cut surface, looking much like follicular stomatitis. The accompanying drawings which I made of the condition at the time give a very good idea of the naked-eye appearances. The piece of tissue marked Fig. 1 was pale in colour, the portion marked Fig. 2 was red. Looked at more closely the yellowish-white areas presented a darker central part, which was a little depressed. Some of the lesions were finely branched, the areas were raised a trifle, and if they were seized and pulled they left the tissue intact, in which they apparently ramified branch-like. If pulled too vigorously they broke off and exposed little pits without any obvious walls, often pear-shaped depressions in the solid lung. When looked at more closely these pits or depressions in which the branch-like plugs were seated displayed *very* thin opaque walls.

FIG. 1.

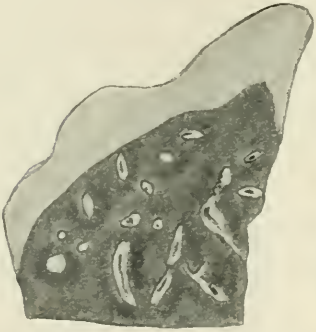
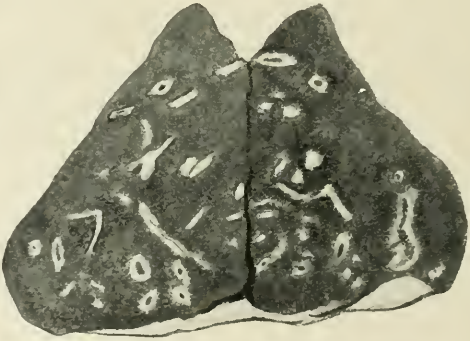


FIG. 2.

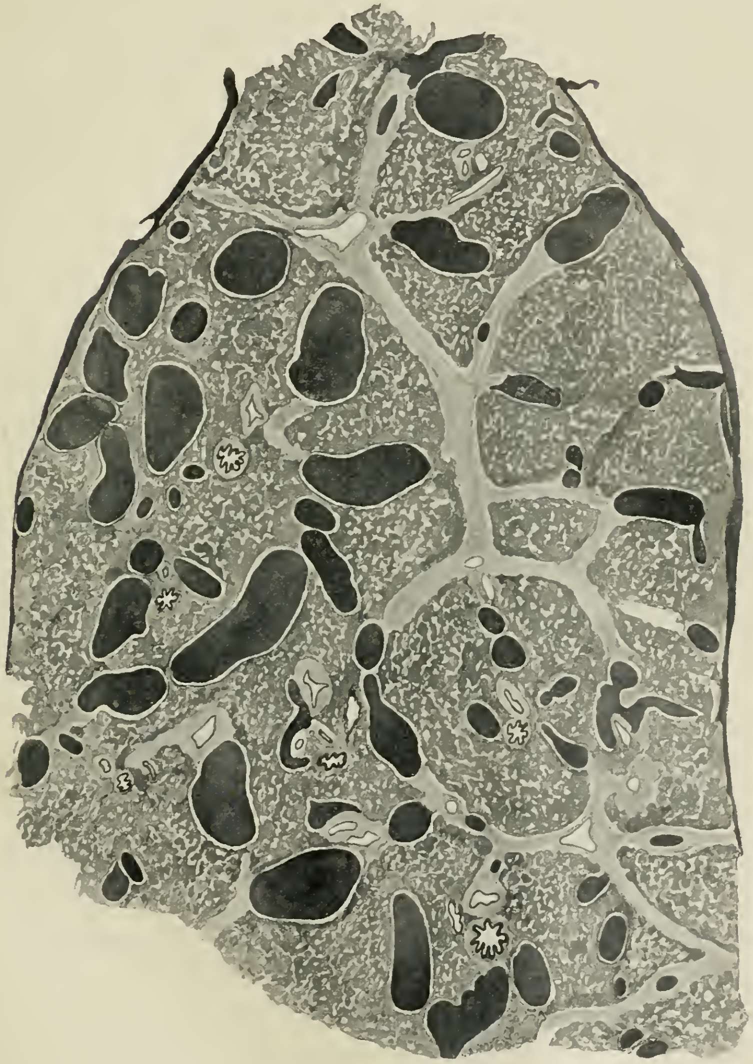


The condition was diagnosed as tubercular by one of the residents who made the autopsy, and the examination had been concluded when the specimen was accidentally brought to my notice.

Under the microscope.—Under a low power (Fig. 3 [× 10]) the solid lung is seen to be irregularly covered with considerable areas assuming a variety of shapes, and which evidently are not lung tissue proper. In a stained section they are inclined to be pale in the centre and to deeply stain in the periphery. They occur in the septal tissue as well as in the lung proper, and here and there they are seen to be in connection with the inflamed pleura.

Under a higher power these areas are found to be fibrinous with white corpuscles in the meshes of the fibrin.

Fig. 3.



In some parts they appear to be chiefly or wholly cellular, and in others the fibrin predominates. They are contained in channels, the thickness of whose walls is merely that of the endothelium of which they are constructed. In a few of the plugs a red blood-corpuscle can be seen but only here and there. These lymph-plugged channels appear to me to be dilated lymphatics which have become invaded by the same material as that which covers the inflamed pleura. The endothelial walls show no signs of proliferation or of inflammation.

The lung itself is consolidated and the alveoli are filled with cellular contents. In a few places fibrin can be seen along with the cells, but the predominant change is cellular—leucocytal mainly.

Some of the bronchi contain cellular plugs similar to those within the alveoli. Other bronchi have shed their epithelium, which is seen curled up in the lumen of the tube along with the cellular elements. Fibrin is seen, but seldom. In a few places there appears to be a slight exudate between the desquamated epithelium and the basement membrane, but this is unusual. The walls of the bronchi in some cases are infiltrated with cells. Nothing abnormal can be seen in the arteries. Some of the dilated lymphatics are closely associated with them, but in no case is envelopment complete. The sections stained by Gram show numerous capsuled diplococci, which occur in the lung proper, the plugs in the lymphatics and in the exudation on the pleura. A section stained for tubercle bacilli yielded negative results.

At the time of the autopsy the lymphatic origin of the plugs did not occur to me. Consequently I did not carefully examine the healthy lung for dilated lymphatics. Had they been dilated they would have surely shown irregularly-shaped pits and depressions, and they ought not to have escaped detection. I can well believe also that this condition might be readily mistaken for bronchiectasis to naked eye inspection. At the time I thought how like the lesions were to diphtheritic membranous casts of the bronchi, but the absence of a bronchial wall threw doubt upon that idea, though the subsequent detection of a very fine white boundary revived the original thought. My impression at that time was that the condition was a fibrinous extension up the bronchial tubes of an ordinary fibrinous pneumonia, but as I have shown my impression was wrong.

The Society for the Study of Disease in Children.

A meeting of this Society was held on Friday, May the 8th, at No. 11, Chandos Street, W., Dr. William Ewart in the chair.

A Paper on the Empty Bronchus Treatment by Posture in the Bronchiectasis of Children was read by the chairman, Dr. William Ewart. His paper was devoted mainly to the management in children of the postural and respiratory aspects of the treatment, which was likely to be successful in proportion to its early adoption. He said that continuity of treatment was essential. The bronchus must be kept empty and the lung must be kept active for a nocturnal as well as diurnal treatment. The costo-abdominal elastic belts worn continuously stimulated the thoracic respiratory mechanism as well as abdominal. In the continuous postural method introduced by him, the declining of the bronchial and tracheal outlet was provided by the inclination of the bed during the night and during intervals of resting in the day.

The following Case was Reported for Diagnosis by Dr. Philip G. Lee (Cork). The patient was a strong and healthy child, aged 2 years and 6 months. Four weeks previously she had marked wry neck, but otherwise was perfectly well. A week later she had extreme retraction of the neck. While on her way to see him she fell, and when he saw her both legs were paralysed. Four days later she had three convulsions, and the retraction of the neck completely disappeared. Subsequently the calf muscles wasted with the reaction of degeneration. There was no paralysis of the bladder or rectum. The peculiar features of the case were the nature of the onset and the entire absence of fever and malaise.

A Case of Aortic and Mitral Stenosis was shown by Dr. O. K. Williamson.

A Case of Supernumerary Digits on Hands and Feet in a Baby, aged 2 months, was shown by Mr. Hugh Lett. A similar condition was exhibited in the mother and a brother of the patient.

A Girl, aged 10 years, with Forward Dislocation of the Inner End of the Clavicle, was shown by Mr. Hugh Lett.

A Case of Multiple Enchondroses in a Boy, aged 9 years, was shown by Mr. Hugh Lett. The enchondroses were extremely numerous, and were present not only on the long bones, but on the scapulæ, ribs, and skull.

A Child, aged 15 months, with Hydrocephalus, Genu Recurvatum, and Talipes Valgus, was shown by Mr. Hugh Lett.

A Case of Abdominal Tumour was shown by Dr. Porter Parkinson.

Specimens of: (1) Achondroplasia; (2) An Anencephalic Fœtus; (3) Intra-Uterine Amputations, were shown by Mr. Russell Howard.

Philadelphia Pediatric Society.

A Meeting of this Society was held on Tuesday, May the 12th, 1908, Dr. Herbert B. Carpenter, first Vice-President, being in the Chair.

Extreme Scoliosis restored to Perfect Symmetry.—Dr. Walter G. Elmor showed a girl, aged 11 years, in whom lateral curvature had been noted several weeks after an attack of typhoid fever. When first seen the right costal margin rested on the brim of the pelvis and the trunk was carried far to the left side of the median line, her body looking hopelessly crippled. A diagram taken at that time showed an arc to the left, the maximum deviation being two inches. Rotation was not very marked. Her vertebral column, formerly dwarfed and twisted, had returned to its normal shape in just twelve months.

Dr. James K. Young said that he had seen this girl at the beginning of the treatment and that the result achieved was excellent. He inquired whether the patient had been tested for rotation at the beginning of the treatment, as the presence or absence of rotation has a direct bearing upon the prognosis. He called attention to the fact that the personal equation always plays a part in these records, as outlines taken by different individuals vary greatly. He considered the Theslow method of taking records, as described by the speaker, an excellent way of recording the progress of the curve. This method, as originally designed, included the outline of the patient, standing, taken in a darkened room with a bright light, and this was a valuable addition. He (Dr. Young) recommended special unilateral movements followed by general movements, together with the use of supports. This combined method gives the best results in treating such cases as the one reported.

Dr. J. T. Rugh said that the appearance of this case proved the beneficial effects of the treatment received. Her age was entirely in favour of the correction of the deformity, and she would in all probability be entirely cured when she reaches maturity, as the encouragement offered by the improvement thus far would stimulate further efforts. The complex nature of this deformity forms one of the greatest problems in its consideration and treatment, and each case was a law to itself and must be treated independently. He also believed in the combined treatment. He had a case, a boy, aged 16 years, of the severe type of deformity, who, by working three or four hours a day for over two years at his exercises, can now voluntarily effect almost entire correction of his deformity. It is difficult to get patients to devote the necessary time to the exercises prescribed. Dr. Rugh also mentioned the method of treatment by plaster-of-Paris which utilised the inspiratory effort to alter the distortion of the ribs.

Dr. G. G. Davis also recommended the combined method of treatment for scoliosis. The real trouble with these cases rests in the amount of work placed upon the patient, the work which it is really necessary for the patient to do.

Dr. Elmer said that the respiratory method described by Dr. Rugh would not have been applicable to this case. Here the rotation was only slight. He also described the oblique step taken by the patient, by means of which the psoas muscle pulls directly upon the vertebræ.

Congenital Luxation of the Hip.—Dr. G. G. Davis exhibited ten children, varying from two to eleven years, all showing results of his operation for congenital dislocation of the hip. Upon some the operation had been performed recently, on others several years ago. Some were still in plaster casts, and all showed the good results obtained by Dr. Davis.

Dr. Rugh said that these cases were extremely interesting. One of the chief points in differentiating congenital displacement of the hip from coxa vara was locating the head of the femur. This was done by finding the femoral artery just below Poupart's ligament, as the head lies directly under it when in the acetabulum. While Dr. Davis's method of reduction differs from that of Lorenz in the manner of accomplishing hyper-abduction and hyper-extension, yet the ultimate effects are practically the same, as the same force is required in either method to stretch the shortened and contracted structures and replace the head of the femur. The results in all cases depend upon the anatomical conditions in the affected hip, and when relapse occurs a second reposition will frequently prove curative. The general results are 60 per cent. of anatomical and functional cures. About 35 per cent. of the remainder are improved through the transposition of the head to an antero- from a postero-superior position. Dr. Rugh successfully reduced the hip of a girl past 12 years of age, with a good functional result.

Dr. Davis described anterior transposition of the head of the femur in some of these cases. He said that he had devised his method to avoid some of the results such as were frequently achieved by the Lorenz method, by which thighs had been broken, nerves injured, traumatism caused, etc. Severe traumatism must follow from the force used to replace the hip. By Dr. Davis's method the worst accident resulting has been a superficial skin blister.

Syphilis Extra-genitally Acquired in Early Childhood.—Dr. F. C. Knowles read this paper. The various sources of infection and those occurring under five years of age were, with but a few exceptions, mentioned in some detail. Unusual cases of inoculation were described under the following headings: parturition, circumcision, vaccination, breast-feeding, hand-feeding, fondling, household utensils, toilet articles, unsterilised surgical, dental, and electrical appliances, careless and unclean methods of caring for wounds, removal of foreign bodies, and miscellaneous sources. He reported a case in a girl, aged 2 years, the chancre being located on the left cheek. This was well shown by photographs. All the concomitant signs of syphilis were present. The disease had evidently been contracted from her mother, as a macular eruption was discovered on the mother. Statistics as to the frequency of extra-genitally acquired syphilis were also given.

Dr. M. B. Hartzell, discussing the subject by invitation, said that syphilis extra-genitally acquired was always of great interest because of the importance and the difficulty in making the correct diagnosis. Failure to diagnose such a case correctly is fraught with disaster, both to the patient and to those about him. The initial lesion may be insignificant, yet one should remember that extra-genital lesions are not uncommon in children. The sources of such infection are innumerable. The greatest number of extra-genital chancres are found on or near the lips. Next come those cases produced by vaccination, but since the abandonment of the use of arm-to-arm vaccination and the adoption of lymph this form has grown much less frequent. Treatment should never be begun before the secondary erruption appears, to make the diagnosis absolute.

Pertussis Treated with the Abdominal Binder.—Dr. P. B. Cassidy reported in full twelve cases of pertussis, in all of which application of the abdominal binder was followed by marked improvement.

Dr. W. N. Bradley said that he had employed the abdominal binder in several cases of pertussis. In one very severe case, a boy with paroxyms severe enough to cause subconjunctival hæmorrhage, the binder had an excellent effect. It not only diminishes the attacks of vomiting but also the number of paroxysms.

Dr. A. H. Davisson wished to know how Dr. Cassidy had these binders made and applied. It was his custom to have a manufacturer make and fit properly a bandage of elastic material. In some infants under a year old, where he had made a diagnosis of pertussis and treated them accordingly, the results were so gratifying that the diagnosis was open to doubt. Dr, Davisson considered the community's aspect toward whooping-cough shameful. That a disease so contagious, which causes so much prolonged suffering with so great a mortality among all classes should be under so little control is a serious reflection on our medical and social administrative abilities. Dr. Davisson thought that the Philadelphia Pedriatric Society should take the initiative in obtaining a hospital for the cure of patients with pertussis and suitable legislation to prevent its unnecessary dissemination. Further, there is a most fertile opportunity presented by pertussis to philanthropy for the investigation and amelioration of a disease which has as much claim for scientific and humanitarian consideration as have tuberculosis and diphtheria, with as likely prospects of equally brilliant results.

Dr. L. M. Allen cited an epidemic of pertussis affecting several families of children at a summer resort. The binder does good by affording abdominal support.

Dr. C. J. Hoban had treated some severe cases of whooping-cough in which the abdominal binder did no good at all.

Dr. Herbert B. Carpenter had seen great improvement follow the use of a binder properly made and properly applied.

Dr. Cassidy explained that stockinette was used, set in as two side strips in Canton flannel, the binder then being laced up the back. In some of his cases drugs had also been given.

Imperforate Anus.—Dr. E. B. Hodge reported the case of a boy, aged 6 days, admitted into the Children's Hospital with a history of restlessness, distension, vomiting, and refusing nourishment. Napkins had been stained with meconium and some black material came in "little spots" in the first urine passed. No evidence of an anus was found. The perinæum bulged slightly; there was slight jaundice. A communication was thought to exist with the prostatic urethra, but a sound could not be passed from the urethra to the rectum. Immediate operation without an anæsthetic was done, the patient being held in the lithotomy position, on hot water bags. The rectal pouch was quickly found at a depth of about one inch, and was readily brought down and stitched to the perinæal skin surface with silk sutures. A large quantity of meconium was evacuated. The operation took fifteen minutes. The patient was then sent home to be nursed by the mother. Next day he was in good condition, passing large amounts of meconium. His mother, however, wished him to die and refused to nurse him. This was only discovered later, and inquiry revealed the fact that he had lived a week in spite of the neglect.

Dr. A. P. C. Ashurst said that two years ago he had operated at the Children's Hospital for Dr. Hutchinson on a child aged 1 day, for imperforate anus. He had had a general idea that it was proper to make an incision in the perinæum, but that in case the bowel was not easily reached that it was next proper to do iliac colotomy. In this patient he had reached the rectum at a depth of an inch and a half, and the baby made an interrupted recovery. Dr. Ashurst had then determined to study the results of these operations, and had collected the series of cases to which Dr. Hodge referred. In only three out of twenty-two cases would it have been absolutely impossible to find the bowel through the perinæum, had a sufficient search been made for it. He had been a good deal criticised for urging the perinæal operation so strongly; and he had no doubt that if he had seen the operations he might have agreed with the operators that a further search in the perinæum would have been inexpedient. But when an incision had been made in the perinæum only one inch deep, and when the autopsy showed that an incision a half or even an inch further would have reached the bowel, he thought he was justified in concluding that a more persistent search from below should have been made. He had operated this winter at the Episcopal Hospital for Dr. G. G. Davis on a child, aged 14 days, with imperforate rectum. The family physician had promised the parents "he would bring it around with poultices and cataplasms." When finally brought to the hospital it was constantly vomiting and crying in great pain. Its abdomen was alarmingly distended, very red, shiny, and covered with large black veins. It looked as if any attempt at palpation would cause it to burst. Even flexing the thighs on the abdomen, to expose the perinæum, seemed dangerous. Nevertheless perinæal proctoplasty was done, the bowel being found at about one inch and a half. Fæcal matter was discharged under great tension, and the bowels continued discharging for the next twelve hours almost continuously. Recovery was uneventful, there being no vomiting and no evidence of discomfort after the operation. Although, on account of the baby's age and the extreme abdominal distension, Dr. Ashurst had been tempted to do colotomy in this case, he was satisfied that the perinæal operation was better, as there would have been no danger of protrusion of the intestines even if the peritoneum had been opened: and he could not see that it would be any more dangerous to open the peritoneum through the pelvis, as advocated by Stromeyer, than to open it through the abdominal wall. In Dr. Ashurst's second patient care was taken to measure the distance from the skin in the anal region to the promontory of the sacrum. It was only one and a half inches, showing that the dissection had been carried up to that level without great difficulty.

Dr. Davis referred to a case in which, after he had successfully made an anus, he noticed a slight deformity, an excrescence on one thumb. This he tied off with a strong silk ligature. The child died later from hæmorrhage from this ligature. Dr. Davis said that he could not get over the idea that someone had loosened this ligature after he had left the house, as he was told the parents were not anxious for the child to live.

Dr. Hodge said that the personal equation is an important factor, particularly as each operator's experience must necessarily be limited. From his study of the cases reported, he would not feel justified in resorting to colotomy in another case until after a prolonged and careful dissection by the perinæum, including a resection of the coccyx and lower sacrum if needed. Since preparing his paper he had learned of three reported cases besides those mentioned to-night by Drs. Davis and Ashhurst. In all of these the rectum was reached by the lower route.

Abstracts from Current Literature.

Medicine.

Eight cases of hereditary spastic paraplegia ('*Rev. of Neurol. and Psychiatry*,' 1907, *p.* 98).—**Ernest Jones** gives a detailed description of a family of nine children. The eight boys were affected with the above mentioned condition; the only girl was perfectly healthy. The signs were spasticity in the lower limbs, talipes equino-varus, and changes in the reflexes—Babinski's sign, etc.—indicative of an organic affection of the pyramidal tracts; there was only slight weakness present. There was no affection of the upper limbs, eyes or bulbar muscles. The signs were not equally pronounced in all the cases, the variation not depending on the age of the patient. The condition began in all cases at the time of learning to walk, which was normal. The family was traced back for 150 years and genealogical trees are appended; no similar case was, however, traced. The diagnosis, particularly from Little's disease and inherited syphilis, is fully discussed, and reasons given why "hereditary" is a more accurate epithet to apply to such cases than "family." M. D. Eder.

True tactile aphasia ('*Rev. Neurol.*,' 1907, *p.* 3).—**Ernest Jones** here reports the first case of this nature that has been recorded. Cases have been recorded under this name which Claparède has shown to be really cases of asymbole. The present case was one of hysterical anæsthesia, which during its recovery passed through the following stages: (1) Astereognosis: the patient could feel objects but could not determine their size or shape. (2) Tactile asymbole: the patient could recognise the shape and size of objects, but not their use. (3) Tactile aphasia; the patient could recognise the shape, size and use of objects touched, but not their name. Tactile aphasia only occurs when from a previous psychic blindness the names of objects become more intimately associated with touch than with sight, as in the normal. M. D. Eder.

A simplified technique for accurate cell enumeration in lumbar puncture ('*Rev. of Neurol. and Psychiatry*,' 1907, *p.* 539).—**Ernest Jones**, after first pointing out the great importance of obtaining comparative results by accurate cell counts, describes a new procedure for this purpose. The account must be read in the original for the details. By an application of the field method of counting to the ordinary Thoma-Zeiss hæmocytometer, an accurate cell count can, with this method, be made in a few minutes and without any calculation whatever. Further remarks are added on some practical questions of technique. M. D. Eder.

The clinical significance of allochiria ('*Lancet*,' *September* 21, 1907, *p.* 830).—**Ernest Jones** gives here a preliminary communication on this subject in a paper that was read at the International Congress of Neurology in Amsterdam. Reference of sensation to the opposite side occurs in two entirely different conditions: (1) alloæsthesia, an error in localisation dependent on hypoæsthesia; and (2) allochiria, a psychical defect concerning chirognostic feeling. This distinction has not hitherto been recognised. The two conditions can be distinguished by seven exact characteristics, that are here detailed. Allochiria is a type of a syndrome to which the author gives the name dyschiria; the other types are achiria, in which the side of a stimulus is unknown, and synchiria, in which a stimulus produces two sensations, one on either side. The sensation produced by stimulation of a dyschiric part has six peculiar attributes, which the author groups under the designation "phrictopathic." Some of the numerous fallacies in the observation of dyschiria are referred to, and stress laid on the resemblance of unilateral achiria to hemiplegia. Dyschiria, including allochiria, is pathognomonic of hysteria.

M. D. Eder.

Mechanism of a severe Briquet attack as contrasted with that of psychasthenic fits (*'Journal of Abnormal Psychology,' December,* 1907, *vol.* II, *p.* 218).—**Ernest Jones** prefaces this article by recalling that in the diagnosis between epilepsy and hysteria there is nothing whatever in the nature of the fit that can decide with certainty. The ordinary hysteric fit differs from an epileptic one in the many particulars mentioned in the text-books, but in the atypical hysteric fits every single feature of an epileptic fit may occur. The diagnosis can therefore be based only on an exploration of the mental state in the free interval. The author suggests that further aid may be obtained from studying the state of the subconsciousness that immediately preceded the fit. He relates the case of a boy who was found unconscious at seven a.m., two hours after a fit, and who could recall nothing that had happened since half-past four. On the forgotten memories being explored, however, it appeared that on leaving the house in the dawn he was startled to see a vivid apparition of his mother in the garden, turned to flee in terror and fell down unconscious. His mother had died in his absence a month ago and he had spent the evening talking of her. He had been deeply attached to her, but there had recently been an estrangement between them on account of his deciding to leave home. In the night he had had several dreams in which she appeared to be cold and reproachful towards him. After discussing the importance of the case the author contrasts the nature of the feeling-complexes in hysteria and neurasthenia, and puts forward a psychological hypothesis of the latter condition.

M. D. Eder.

The development of the articulatory capacity for consonantal sounds in school-children (*'Inter. Arch. f. Schulhygiene,' Bd.* IV, *Heft.* 2, *S.* 186).—**Ernest Jones** records here the result of 105,000 speech tests, arranged on the basis of a special marking system: 450 children were selected by the teachers as speaking well, 25 in each sex from every year of school life. From the tables and statistics given the following conclusions were obtained. (A) *Relation to age:* In both sexes progress in the perfection of this capacity is found principally at two years of school life; in boys these ages are seven and eight, the former being rather the more important; in girls the ages are six and ten, the latter being rather the more important. In addition, less important stages are found at other years. With the boys at the age of ten improvement is found to have occurred in the worst speaking boys only: with the girls at the ages of seven and twelve, especially the former, improvement is found to have occurred in the better speaking girls only. (B) *Comparison of the sexes at different ages:* On the whole the capacity is greater in the case of the girls, chiefly owing to the larger number of boys in whom it is unusually badly developed. The girls excel at six of the nine years, in all except those of eight, nine, and ten; even in these their inferiority is only manifest at the age of nine, being extremely slight in the other two. In four of the years, namely, at the age of five, eight, ten, and eleven, the disparity between the sexes is so slight as to be negligeable. In the other five years there is a decided difference in the capacity of the two sexes. At one of these ages, that of nine, the boys excel; at the other four, namely, at the ages of six, seven, twelve, and thirteen, the girls excel. Of these five years the greatest difference is found at the age of six, next at the ages of seven and nine, next at twelve, and least at thirteen.

M. D. Eder.

Diphtheria at the Hôpital des Enfants malades (*'Bull. et Mém. de la Soc. méd. des Hôp. de Paris,' January* 17, 1908, *p.* 40).—**A. Baudouin** and **E. Brissaud.**—There were 789 admissions to Marfan's diphtheria block at this hospital during the year ending May, 1907: 555 were found to have diphtheria. Of these 58 died, a mortality of 10·45 per cent. On subtracting 24 who died less than twenty-four hours after admission the mortality was reduced to 6·4 per cent. Broncho-pneumonia occurred in 35 cases with 21 deaths, a mortality of 56 per cent; 295 cases were laryngeal. 43 of whom died, a mortality of 14·5 per cent. Intubation was performed on 149 cases with 24 deaths, a mortality of 18·1 per cent.; tracheotomy on 3 cases with 2 deaths, and on 10 both operations with 4 deaths. All the cases admitted received antitoxin; 106, or 13·4 per cent., had serum phenomena, which were as follows: urticaria in 72, erythema marginatum in 26, localised erythema in 3, pains in 5.

J. D. Rolleston.

Persistent crying in hereditary syphilis (*'Arch. de méd. des Enf.,' January*, 1908, *p.* 54).—**Comby.**—Some well-nourished children who are suckled regularly and present no digestive troubles are constantly crying, especially at night. Hunger, colic, or desire for movement may be regarded as the cause, but treatment suited thereto proves unavailing. This symptom does not develop at birth, but a fortnight or one or two months later. In some cases the familiar signs of hereditary syphilis may be present, while in others the child may appear free from any specific stigma, and the parents will deny any history of infection. Comby has collected five cases of this condition, four of which were fatal and displayed signs of syphilis at the autopsy. In all, however, the cries soon stopped after mercurial treatment had been instituted. The cries are probably due to the pain provoked by the irritation of the bone and periosteum or to epiphysial lesions.

J. D. Rolleston.

Corporal punishment in public schools (*'Arch. of Pediat.,' January*, 1908, *p.* 59).—**L. H. Gulick.**—The general consensus of medical opinion is against corporal punishment as a means of securing discipline in public schools. A large proportion of the so-called incorrigibles have more or less serious physical defects, on removal of which they become amenable to the ordinary forms of discipline. The possible existence of sadism and masochism in the teacher and child also militates against corporal punishment. Reduction in the size of the classes, better adaptation of the curriculum to meet the needs of the average boy and girl, and segregation of difficult cases under specially qualified teachers are the methods suggested which would render corporal punishment unnecessary. J. D. Rolleston.

Typhoid fever in infancy ('*Arch. of Pediat.*,' *January*, 1908, *p.* 1).—**J. P. Crozer Griffiths** reports three cases of typhoid fever in the first year of life. In all abdominal distension, diarrhœa, rose spots, and enlargement of the spleen were present. A positive Widal's reaction was found in all. The first case was a boy, aged 5 months, who was infected by his mother. Intestinal hæmorrhage occurred on the fifteenth day. The symptoms during the last few days of life simulated perforation. The autopsy, however, showed an entire absence of ulceration, and only swelling of the lymphoid tissue. The second case was a girl, aged 9 months, who was probably infected by the water used for cleaning her mouth. A primary attack of twenty-one days' duration was separated by an apyrexial interval of a week from a relapse which lasted about twenty days, and was complicated by furunculosis. Complete recovery took place. The third case was a girl, aged 9 months. Several members of the family had recently suffered from typhoid fever, so that direct contagion may have been the cause of the attack. The disease was complicated by a large abscess over the sacrum, and later by suppurative otitis media, gonorrhœal vaginitis, dyspepsia, and finally diphtheria, for which she was transferred to another hospital.

J. D. Rolleston.

Pancreatitis in mumps ('*Practitioner*,' *February*, 1908, *p.* 194).—**W. Edgecombe** thinks that mild cases of pancreatitis are more common in mumps than is generally supposed. In an epidemic of thirty-three cases of mumps at a boys' school, he noticed symptoms indicating a metastatic affection of the pancreas in five. The ages ranged from nine to eleven years. In all the cases there was rapid subsidence of the parotid swelling, followed by vomiting, pain, tenderness in the epigastrium, and constipation. In two of the cases a distinct swelling of the pancreas could be felt. In all but one of the cases acetone and diacetic acid were found in the urine. Glycosuria was not observed. Cammidge's pancreatic reaction was present in one case. All recovered. J. D. Rolleston.

Acute hæmorrhagic nephritis after epidemic parotitis in a child aged 7 months ('*Arch. f. Kinderheilk.*,' *Bd.* 47, *Heft* 1–2).—Not only is the occurrence of parotitis rare in infants, but the following case reported by **Jelski** is remarkable, in that eleven days after the commencement of the disease a swelling of the parotid recurred, and, coincidently—accompanied by high fever—an acute hæmorrhagic nephritis set in and proved fatal to the child. Bacteriological examination of the urine showed streptococci and blue pus. Jelski thought that possibly a short broncho-pneumonia immediately before the parotitis was connected with the severe complication and influenced the fatal result. J. E. Bullock.

The ætiology of icterus neonatorum ('*Jahrb. f. Kinderheilk.*,' *Bd.* 67, *Heft.* 1).—**Knaefelinacher**, after thorough critical testing of the hitherto accepted theories as to the occurrence of icterus neonatorum, and as the result of many special experiments, comes to the following conclusions: At birth the viscosity of the bile is greater than it is a few days later, so that a greater pressure is required to expel the bile. In consequence of the post-partum hyperæmia of the liver, which is associated with intestinal peristalsis, an increasing secretion of bile in the liver occurs soon after birth. The liver cells, unable to pass the newly-formed bile through the small biliary ducts, become filled with viscid bile, so that a flow from the liver cells into the lymph stream takes place, which manifests itself in jaundice.

J. E. Bullock.

The relation of the kidneys to alimentary intoxication ('*Jahrb. f. Kinderheilk.,*' *Bd.* 66, *Heft.* 6).—**Neumann** considers that the kidney symtoms (albuminuria and casts) occurring in infants in the course of severe alimentary intoxication do not indicate a nephritis but a transitory damage to the kidney brought about by the toxic process. The universal severe results are not due to a kidney lesion, but the latter is due to the secretion of some toxic substance.

J. E. Bullock.

The induction of electrical excitability in tetany of children by electric currents ('*Berl. klin. Wochenschr.,*' *No.* 47, 1907).—**Paula Philippson**, as the result of various experiments which were intended to show in the first instance the influence of calcium on the excitability of nerves, concludes that in infants affected with tetany, after some minutes' continued galvanisation, a distinct localised lowering of electrical excitability sets in. She considers that the electric current influences the peripheral motor nerves in tetany of infants, but whether it depends on a change in the sensitiveness of the nerves or in their conductivity she leaves at present uncertain.

J. E. Bullock.

A case of Hirschsprung's disease; congenital dilatation of the colon ('*La Clin. Infant.,*' *January* 15, 1908, *p.* 41).—**Guinon** and **Reubsaët** reported this case. In this disease there is primary dilatation of the large intestine without any apparent stricture or obstruction. As a consequence of the dilatation the walls hypertrophy and the gut elongates. Constipation is the first symptom noticed in the first few days after birth, which does not yield to enemata, still less to purgatives. The belly becomes enormously dilated, to an extent only equalled by ascites and very large tumours, but is distinguished by its relative softness and by the presence of peristaltic movements. In some cases coprostasis gives rise to the presence of soft, doughy lumps. When medically treated the patient may survive some years, but at last the accumulation of fæcal matter sets up inflammation and infection of the walls of the gut, with septicæmia and death, either rapid or by progressive cachexia. The pathology of the malady is obscure, but it seems probable that the dilatation is of the nature of a primary malformation. In the present case the child was a male, aged 3½ years, brought to the Clinic on account of constipation and an enormous belly.

Vincent Dickinson.

Orthostatic albuminuria ('*Med. Press,*' *January* 29, 1908).—**Jehle**, in a paper on the albuminuria of childhood, read before the Pediatric Meeting in Vienna, contends that the orthostatic variety is merely an accentuated form of physiological albuminuria, and differs from a pathological condition depending on a lesion of the kidney. He showed six children with albuminuria, who passed albumin only when in the standing posture. When walking, running or sitting, no albumin was excreted. The greatest amount was passed when the child stood up on its knees, but when it sat down on its ankles the albumin disappeared. Change in position of the spine also affected the constituents, lordosis of the lumbar region producing it while kyphosis suppressed it. If any of the patients were fixed in a bent posture, no albumin was passed on either walking or standing, but immediately the child was allowed to stand erect it reappeared. Thus it seems that the lordosis, especially in the first and second lumbar vertebræ, is the primary cause of albumin in these cases, and that any weakness of the lumbar muscles is likely to produce it. Pressure on the kidneys interfering with the circulation is the immediate cause of the condition, and the proper treatment consists in correcting the anatomical lesion. **Noorden** agreed that the mechanical explanation was the best that had been propounded for orthostatic albuminuria, but it did not account for those cases in which the albuminuria was cyclical. **Munnaberg** also pointed out that orthostatic albuminuria tended to correct itself without reference to the anatomical condition, and stated that muscular strain, mental exertion, cold baths, shock, etc., all produced it without any lordosis being present.

T. R. Whipham.

Plastic bronchitis in a girl, aged 11 years, the seventh attack in four years ('*Lancet*,' *February* 15, 1908).—**Samuel West** describes an interesting case of plastic bronchitis, occurring in a girl, aged 11 years. This was the seventh attack. The present one began with headache and cough. She slept badly and vomited several times. She complained of a lump in her throat, and brought up some blood-stained sputum. The percussion note was found to be greatly impaired over the whole left side, front and back, and at the base behind was almost dull. The vocal resonance and breath-sounds were absent everywhere except in the left interscapular space, where they were somewhat exaggerated. Five days after her admission into hospital the patient coughed up a large cast, two and a half inches long. The temperature on the evening before reached 103° F., but on the morning after the cast had been expectorated it fell to 99·8° F. The apex of the heart, which had previously been displaced to the left, returned to the left nipple line. The upper part of the left lung now became resonant, and the breath-sounds were distinct and accompanied with a little crepitation. The base behind, however, continued *in statu quo* with dulness to percussion and absent breath-sounds. The patient was now given ten grains of iodide of potassium thrice daily. Gradually the physical signs became much as they were on admission, and the heart's apex returned to its former position to the left of the nipple line. The patient became more dusky and drowsy, and again she brought up another cast as large as the first and a good deal of muco-purulent material. Immediately thereafter the apex of the heart receded and the physical signs cleared up. In the course of the next few days, however, her condition relapsed and another cast was expectorated. She then improved, but the same phenomena recurred with the expulsion of still another cast. After this, however, she began steadily to improve. The case is interesting as showing the displacement of the heart, and also the complementary dilatation of the right lung was well marked. James Burnet (Edinburgh).

Pathology.

Delayed chloroform poisoning (*'Lancet,' February* 29, 1908).—A number of cases of this unfortunate condition are recorded. **Thorp** reports the case of a boy, aged 3 years and 10 months, who was operated on for phimosis. He had recently recovered from chickenpox, but showed no symptoms of renal complications. Two drachms of chloroform were given and the administration lasted about seven minutes. It was well taken, and the patient slept after the anæsthetic. Fourteen hours after the operation attention was directed to his noisy breathing. The pulse was small, rapid, and feeble. He vomited several times, and the vomitus smelt strongly of chloroform. The next morning he remained unconscious, but the respirations were less laboured. In the afternoon an acetone odour could be detected in his breath, and a catheter specimen of his urine was obtained. Towards evening he became comatose. He died at midnight, 36¾ hours after the operation and about 23 hours after the onset of symptoms. The specimen of urine showed 8·31 grains of urea per ounce. The acetone reaction was distinctly present, but the reaction for diacetic acid was extremely doubtful. **Telford** gives records of three cases which came recently under his observation. The first was that of a boy, aged 2½ years, operated on for tuberculous epididymis. The chloroform administration lasted twenty minutes. The child recovered promptly from the anæsthetic, but on the following evening he vomited some dark, coffee-ground material, and was very restless. The breathing was hurried, and the pulse thin and beyond count. Death took place six hours later and was ushered in by drowsiness. At the post-mortem the liver was found to be somewhat enlarged, and showed extreme fatty changes. The kidneys were of a pale yellow tinge, especially in their cortical portions. Microscopically, marked fatty degeneration was found to be present both in the liver and kidneys. The second case was that of a girl, aged 8 years. She was operated on for double genu valgum. The anæsthesia lasted for twenty-five minutes. After the operation she became very restless, and slept fitfully during the night. Next morning her condition was worse. She was constantly retching, and the odour of acetone could be detected in her breath. The pulse was quick and feeble. Later in the day she vomited copiously dark brown fluid. During the night she became weaker, and she died next morning. Urine voided just before death contained both acetone and diacetic acid. Fatty changes were found in the kidneys after death. The liver was also found to be degenerated, and fatty changes were detected on microscopic examination. The last case was that of a boy, aged 1 year and 9 months. He was operated on for the radical cure of a right inguinal hernia. The operation lasted fifteen minutes. He recovered well, but next day he vomited some dark fluid, and was almost comatose, but never restless. The urine showed albumin, diacetic acid and acetone. The breath smelt also of acetone. Next day he was much better, and the vomiting ceased. The odour of acetone disappeared. Ultimately he made a complete recovery. It is interesting to note that this case recovered although neither alkaline nor infusion treatment was adopted. **Bride's** cases are two in number. The first was a female child, aged 3 years, operated on for double talipes equino-varus, the result of rickets. The chloroform administration lasted for twenty minutes. Twenty-two hours after the operation the child was comatose, and acetone was present in the urine, but no diacetic acid could be detected. Ten hours later death occurred. General convulsions were present in this case as well as coffee-ground vomiting. Fatty changes were found present in the liver and kidneys. The second case was also a female, aged 14 years. The operation performed was one for double knock-knee, and the chloroform anæsthesia occupied only fifteen minutes. Twenty-four hours later she commenced to vomit dark-coloured material, and acetone and diacetic acid was found present in the urine. The liver was slightly enlarged and painful on palpation. She ultimately recovered. It is interesting to observe that both of Bride's cases were markedly rachitic. **Wilson** reports a case from Paddington Green Hospital. A female, aged 5½ years, was admitted with signs of tuberculous disease in the neck of the right femur and upper end of the bone. She had previously suffered from "periodic attacks of sickness and bilious vomiting." She was of a very neurotic and excitable temperament. The urine contained neither acetone nor diacetic acid. The operation was performed a week after the child's admission into hospital. During the next two days she was very languid and apathetic. Nausea and retching had set in, and continued in spite of treatment. She lost sphincter control. She suffered from excessive thirst, and this was a marked symptom in the case. On the third day a faint odour of acetone could be detected in the breath. On the morning of the fourth day the patient was deeply jaundiced, and the urine gave a faint reaction to the tests for bile, but contained no acetone. On the same evening she became wildly excited and shrieked aloud, and complained of considerable epigastric pain. She vomited some blood. The odour of acetone was now more marked. During the night the restlessness continued, but next day she was much quieter, though evidently becoming comatose. In the evening irregular panting breathing set in. At the sixth day after the operation acetone was found in the urine for the first time, with a trace of albumin, but no diacetic acid. She eventually regained consciousness on the eighth day. Acetone now began to be excreted in larger amount, and in the evening she became once more excited, and died in a few hours. Post mortem definite fatty changes were found present in the liver and kidneys. The special features in this case are the delay in the excretion of acetone in the urine and the unusually prolonged course of the illness. The case did not end fatally till seven and a half days after the onset of the symptoms. JAMES BURNET (Edinburgh).

The pathogenesis of post-diphtheritic paralysis and heart failure in diphtheria ('*Reports of the German Neurological Institute*,' *vol.* xv).—**Spieler** is of opinion that heart failure in diphtheria is not the result of any affection of the myocardium, but is due to a degeneration of the vagus nerve. It depends upon the same conditions as post-diphtheritic paralysis, whose seat in the peripheral nerves (and not in the central nervous system) is readily demonstrable in recent cases. The lesion occurs first in the nerve trunks whose terminal branches have been most under the influence of the diphtheritic poison—such as the palatine and accessory nerves, and later the more distant peripheral nerves. J. E. BULLOCK.

Banti's disease in children ('*Jahrb. f. Kinderheilk.*,' *Bd.* 66, *Heft.* 6).—**Finkelstein** states that Banti's disease is an anæmia resulting from primary enlargement of the spleen, succeeded by cirrhosis of the liver with ascites. The first stage (splenic tumour, anæmia, and epistaxis) lasts three, or five, and even ten years: the second stage (in which icteric changes in the skin and stomach disturbance occur) continues many months; the ascitic stage (with jaundice and atrophy of the liver) lasts nearly a year. Finkelstein gives the clinical history of two cases, in one of which an autopsy was obtained and the pathological anatomy of the affected organs investigated. In spite of this Finkelstein states his inability to give any new insight into the ætiology and pathogenesis of the disease; he thinks, however, that he can establish a causal connection with pseudo-leukæmia and late syphilis.

J. E. Bullock.

An experimental investigation into the pathogenesis of salivation in disorders of digestion (‘*Arch. f. Kinderheilk.*,’ *Bd.* 47, *Heft.* 1–3).—**Roeder**, as the result of experiments on dogs, arrives at the conclusion that an increase of salivary secretion is often observed in digestive disorders; that with the rejection of food from the stomach into the mouth there occurs a stimulation of the centripetal nerves of the salivary glands, and consequently free salivation. J. E. Bullock.

Congenital hydronephrosis (‘*Post-graduate*,’ *January*, 1908).—**Coffin** states that congenital hydronephrosis is rarely bilateral. It may arise from an abnormal position of the kidney, atresia of the ureter, the presence of abnormal valves, phimosis, or an abnormal opening of the ureters into the bladder. The retained urine distends the ureter, the pelvis of the kidney, and finally the tubules, causing degeneration of the parenchyma. The writer reports two cases: One, a child, aged 23 days, who died after convulsions and slight hæmaturia. At the necropsy acute parenchymatous nephritis was found. Both ureters were distended to twice the normal size, and the pelvis of each kidney was dilated In the right ureter there was a constriction 4 cm. below the kidney and another at its entrance into the bladder; the left ureter also had a constriction at its vesical opening. The bladder was normal and contained a little blood-stained urine. The other case was a child who died at the age of 6 weeks of acute pleurisy. Post mortem there was acute nephritis and hydronephrosis of the right kidney with marked dilatation of the pelvis. The ureter in this case also presented two constrictions, one 5 cm. below the kidney and the other at the entrance into the bladder, which was normal. In neither case was any calculus found.

T. R. Whipham.

Therapeutics.

Treatment of cavernous nævus by means of metallic magnesium (‘*Lancet*,’ *February* 15, 1908).—**J. A. C. McEwen**, of Glasgow, had under his care a female infant, aged 15 months, suffering from a large cavernous nævus of the right side of the face which occupied the whole substance of the cheek, being covered superficially by a layer of thin, white skin. The mode of treatment consisted in preparing several needles cut from magnesium ribbon. These were sterilised by boiling and were introduced by pushing with a pair of forceps into the substance of the tumour through a slight puncture in the surface made with a bistoury. The needles were entirely buried in the substance of the tumour, no part being left projecting on the surface. Some six or eight needles were introduced into various parts of the tumour. The surface operated on was covered by a film of gauze with celloidin. The beneficial effect produced depends upon a mechanically irritating effect on the walls of the vessels with which they come in contact, and also upon the process of oxidation set up, for magnesium is very readily oxidised. The ultimate result is occlusion of all the vessels of the tumour

by the formation of fibrous tissue, which will ultimately diminish greatly in bulk.
James Burnet (Edinburgh).

A new remedy for whooping-cough—fluoroform ('*La Clin. Infant.*,' *January* 1, 1908, *p.* 32).—**Tissier** treated 117 cases with this substance with excellent results. There were no unfavourable symptoms, even with excessive doses of the drug, which was well tolerated and acted promptly. On the second or third day the number of paroxysms markedly diminished —by one third or a half; their intensity also decreased, and they disappeared entirely in from ten to thirty days. It rarely happened that there were more than ten paroxysms a day after one week's treatment. No lung complications occurred. Fluoroform is used in an aqueous solution of 2·8 per cent., of which one drop is given in water after each attack on the first day, two drops on the second day, and so on, without exceeding a total of one hundred drops per day for children less than one year old. From the age of two to four years Tessier gives ten drops four times a day to begin with, increasing the dose up to two hundred drops a day. Beyond the age of four years fifteen grammes of the solution can be given daily in doses of a tablespoonful. Adults attacked with this complaint may take thirty grammes daily.
Vincent Dickinson.

Treatment of vascular nævi ('*Med. Press.*,' *February* 12, 1908).—**Wickham** and **Degrais** have made a communication to the Académie de Médecine on the effects of radium in the treatment of nævi. A flat apparatus coated with a varnish, in which radium was incorporated, was applied to the affected areas, the doses of the radiations being regulated by the duration and the number of applications. The authors found that certain nævi can be cured by weak doses frequently repeated without the slightest reaction being produced. In other cases, however, where the lesions were extensive and deep, it was necessary to produce a certain amount of reaction, but in these cases the new tissue was supple, smooth, and colourless, leaving only a slight disfiguration. The nævi which give the best results are those which are most coloured and raised above the cutaneous surface, but in all forms the treatment by radium is said to be beneficial. The applications are painless, and in consequence large surfaces can be treated and the apparatus applied to children while asleep.
T. R. Whipham.

Otology, Laryngology and Rhinology.

Otitis media in children ('*California State Journal of Medicine*,' October, 1907).—**Sanford Blum**, in a short paper, points out that tenderness on pressure under the auricle, between the angle of the jaw and the sterno-mastoid, is a very useful sign in the diagnosis of doubtful cases of acute otitis media in infants. He also considers the bacteriological findings in the naso-pharynx of value as bearing upon prognosis.
Macleod Yearsley.

The curability of certain forms of septic meningitis of aural origin (*Société Médicale des Hôpitaux*, November 15, 1907).—**Laurens** read an important paper on this subject, in which he pointed out that the curability depends upon the kind of microbe: streptococcic meningitis is very grave: in pneumococcic and staphylococcic meningitis recovery is more common. One case, in a boy, aged 15 years, was described in which lumbar puncture and the intra-venous injection of 4 c.cm. of a 1 per cent. solution of collargol resulted in recovery. The organism present was first thought to be a streptococcus, but was found on further examination to be an enterococcus. MACLEOD YEARSLEY.

Ophthalmology.

Purulent ophthalmia neonatorum of intra-uterine origin ('*Monats. f. Geb. u. Gyn.,*' *Bd.* 27, *Heft.* 1).—**Holzbach** states that gonorrhœal ophthalmia is but rarely seen in infants whose birth has been attended by lying-in charities, owing to the careful antiseptic methods adopted. It cannot, however, be wholly prevented, and when it does occur it is usually of a mild character. The incubation period is normally three days, and it is shown by the records that the condition most often occurs on the third day after birth. Most cases, consequently, were infected during labour. When the ophthalmia appeared on the first or second days it was ascribed to a particularly rapid form of the disease, but in a considerable number of cases children have been born with evident signs of inflammation, thus proving that infection may occur even *in utero*. The writer describes a case in point: The membranes had ruptured nearly four days before the child was born. At birth there was a purulent discharge from both eyes; both corneæ were clouded, and the left, in addition, presented a large ulcer. On the following day an ulcer appeared in the right cornea also. The discharge from both eyes was proved bacteriologically to be gonococcal in origin. The recorded cases show that in nearly every instance the membranes had been ruptured for several hours before birth. The writer is of opinion that in such cases the ophthalmia is due to gonococci ascending from the vagina, or to direct infection of the eyes from the walls of the cervical canal. In all cases of premature rupture of the membranes special care should be taken in applying prophylactic treatment of ophthalmia. Finally, the prognosis of intra-uterine ophthalmia must be regarded as unfavourable, as the children of mothers who are infected with gonorrhœa are generally ill-developed and incapable of resisting severe infection during the first few weeks of life.

T. R. WHIPHAM.

Surgery.

Surgical treatment of empyema ('*Canadian Journ. of Med. and Surg.,*' *February*, 1908).—**S. Lloyd.**—Whenever a medical man has a case of pneumonia which does not resolve in the usual way he should suspect a localised empyema, for, as Jackson showed, an unresolved pneumonia very seldom exists. Localised empyemata are often mistaken for tuberculosis, and the fact that fluid is not obtained on exploration does not preclude its presence in the chest: the needle employed is often of too small a calibre, or it may be plugged by a flake of fibrin. The purulent focus may be very small and may be interlobar. Fluid which to the naked eye may appear to be serous may, when stained, show a large number of pyogenic micro-organisms; these should be treated as empyemata. As 20 per cent. of empyemata are cured by aspiration without operation, this is an important procedure in certain types of the disease, such as that due to the pneumococcus. For the details of the author's method of insuring re-expansion of the lung after operation for empyema we must refer to the original paper. Of 225 such operations 97 were cured, 58 improved, and 15 died of the effects of the operation itself. J. PORTER PARKINSON.

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SOME EXPERIENCES OF PNEUMONIA IN CHILDHOOD.

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Pneumonia is one of the common affections of childhood, and as such figures largely in the medical records of a children's hospital. Trite though the subject, perhaps, may be, and in spite of all that has been written and said about it, there are many points which seem to have escaped the notice of those who have not made a special study of the disease as it occurs in childhood. It is the common details of life and death that are apt to be passed over unheeded and unrecorded, but when attention is drawn to them it is often not impossible to learn a few facts from their recital. Dr. F. Taylor, in the last Wightman Lecture, gave a comprehensive review of the subject, and enhanced the value of his remarks by details of his personal experience. In a subject so well worn as pneumonia and so ably dealt with so recently as last year, personal experiences alone are likely to prove of even a passing interest. In this paper, therefore, I shall chiefly confine myself to my own experience of the disease in a series of 150 cases in children under 12 years of age, which have been under my care at the Evelina Hospital during the last few years, though incidentally it may prove useful to compare the details of my cases with those of others.

In the first place, given that a child has pneumonia it is a common error to imagine that it must of necessity have lobular or broncho-pneumonia. Such is by no means always the case. The lobar variety of pneumonia is much more frequent in childhood than is often supposed. All writers agree that broncho-pneumonia is the commoner form amongst children, but when a series of cases comes to be considered it will be found that lobar pneumonia is not so much more infrequent. Of my 150 cases, 65 were of the lobar type and 85 of the lobular, or 43·3 and 56·7 per cent. respectively, which gives a proportion of 1 to 1·3. These figures closely agree with those quoted by Dr. Taylor*; thus at Guy's Hospital during the year 1906 there were 63 cases of pneumonia in children, of which 28 were lobar and 35 lobular—a percentage of 44·4 and 55·5 respectively, and at Shadwell Hospital Pearson collected 121 cases of lobar and 172 of broncho-pneumonia, or 41·3 and 58·7 per cent. In contra-distinction to these figures Holt,† in his American statistics, finds that broncho-pneumonia is more common than lobar in the proportion of 3 to 1, and some English writers agree with him in thinking that broncho-pneumonia is considerably the commoner of the two. Still, in my experience this is not the case.

The diagnosis between lobar and broncho-pneumonia is often a matter of some little difficulty. A confluent broncho-pneumonia or an associated condition of collapsed lung gives very similar signs to those found in the lobar form. Rivière states that the occurrence of a crisis should determine the distinction between the two, but in some cases of lobar pneumonia, in which the disease is extending, the crisis is delayed, while in others the occurrence of one or more pseudo-crises gives rise to a short form of lysis. The chief points of distinction to be borne in mind are: (1) That lobar pneumonia is almost always primary, while broncho-pneumonia is very frequently secondary; (2) that its onset is sudden and the symptoms well marked, whereas broncho-pneumonia begins insidiously as a rule; (3) that the temperature tends to be more uniformly high and to end by crisis, whereas in the other the course of the fever is prolonged and irregular, and rarely ends abruptly; (4) that lobar pneumonia usually affects a localised area of one lung, at any rate to begin with, the signs being limited to that area and leaving the rest of the lung free, while broncho-pneumonia is bilateral and more extensive; (5) that broncho-pneumonia tends to occur at a slightly earlier age than lobar. In the lobar type the exciting cause is the pneumococcus, but in the lobular variety no one form of micro-

* Wightman Lecture, 1907.

† Holt, 'Diseases of Infancy and Childhood.'

organism is constantly associated with the disease. According to Wollstein[*] the pneumococcus is present in 76 per cent. of the primary broncho-pneumonias and in 63 per cent. of the secondary cases. In many of the primary cases it is found alone, but often there is a mixed infection with the streptococcus, staphylococcus, or some other organism; in nearly all the secondary cases the infection is a mixed one.

In dealing separately with each of the two forms of pneumonia I shall take the lobar variety first, as it is on the frequency of this disease that I wish to lay stress.

Lobar Pneumonia.

Sex.—In childhood, as in adult life, the male sex is the one that is chiefly affected, though why this should be so in the case of children does not admit of an easy explanation. In the case of adults this may be accounted for by the fact that males are more exposed by their pursuits or occupation to the apparently predisposing causes of the disease. In children this is not the case; still the fact remains that boys are more often attacked than girls. Of my 65 cases 37 were males and 28 females, or 56·9 per cent. as compared with 43·1 per cent. This closely tallies with Holt's figures of 60 and 40 per cent., and seems to be about the usual ratio.

Age.—Lobar pneumonia may occur at any age. Holt mentions a case in an infant at the age of three months, and states that the disease may be found even in the newly-born. The youngest in my series was a child aged 7 months, and three others occurred under the age of one year. The ages of my cases were as follows:

1st year	4 cases		7th year	3 cases
2nd ,,	12 ,,	37 cases, or 56·9 per cent.	8th ,,	3 ,,
3rd ,,	15 ,,		9th ,,	1 case
4th ,,	10 ,,		10th ,,	3 cases
5th ,,	6 ,,		11th ,,	2 ,,
6th ,,	5 ,,		12th ,,	1 case.

From the above it will be seen that the greatest number of my cases occurred during the second, third and fourth years, 37 cases, or 56·9 per cent., being found during that period. This coincides with Rivière's observation,[†] but Holt, in dealing with American cases, finds the period of greatest incidence to be from the third to the fifth years, and other authors make it even later still.

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[*] 'Montreal Med. Journ.,' June, 1905.

[†] Quoted by Taylor, *loc. cit.*

Site of the lesions.—In my series the right lung was affected in 37 cases, or 56·9 per cent., the left in 23, or 35·3 per cent., and both lungs in 5 cases, or 7·8 per cent. The disease was situated in the apex of one or both lungs in 18 cases, or 27·8 per cent., and in one or both lower lobes in 39 instances, or 60 per cent. The right middle lobe, on the other hand, was much less frequently attacked, only 4 cases, or a percentage of 6·1, having the lesion limited to this area. In the remaining 4 cases the whole of one or both lungs was involved. The various situations of the lesions in my series are given below:

Right apex	16 cases	Left apex	0 cases
,, middle lobe	4 ,,	,, lower lobe	22 ,,
,, lower lobe	16 ,,	Whole of left lung	1 case
Whole of right lung	1 case		

Both apices	2 cases
,, lower lobes	1 case
Whole of both lungs	2 cases.

It is generally acknowledged that the right lung is more often affected than the left, but in my cases the incidence on that side was rather more frequent than appears usually to be the case. Thus Holt, in a large series of 950 cases, found the right lung to be involved in 45·5 per cent. and the left in 41·5 per cent. At all ages one of the lower lobes is most frequently attacked, but in children apical pneumonia is by no means uncommon, and my statistics fully bear out the fact. It is noticeable, however, that in all my cases in which one apex alone was involved it was the right that was attacked, not a single case having occurred on the left side. On the other hand the majority of basal cases were found to have the left side affected in the proportion of 1·3 to 1. The relative susceptibility of the right apex and the left lower lobe as well as the relative immunity of the right middle lobe are also confirmed by Holt's statistics.

Onset.—The onset of lobar pneumonia is almost invariably sudden. Thus in 61 of my cases the commencement could be definitely determined; in 3 the onset was not accurately described; and in 1 case only, in which the pneumonia occurred in the course of a prolonged bronchitis, was it impossible to fix the date at which it began.

Crisis or termination of the fever.—In my series the disease terminated in a definite crisis in 44 out of the 54 cases, or in 81·4 per cent., in which the termination of the pneumonic process could be accurately determined. The crisis took place, in the majority of cases, between the fifth and tenth days, during which period it occurred in 30 instances, or 68·1 per cent. A few cases terminated by crisis as early as the third or fourth day. Such are apt to be mild, though the sequence of events indicating a true pneumonia appear to take place. Others again continued till the sixteenth, seventeenth, or eighteenth day before the crisis occurred, and are to be explained by the disease spreading to other parts of the lungs. The dates of the crisis in my case were :

3rd day .	1 case	10th day .	5 cases
4th ,, .	2 cases	11th ,, .	3 ,,
5th ,, .	6 ,,	12th ,, .	3 ,,
6th ,, .	6 ,,	13th ,, .	2 ,,
7th ,, .	5 ,,	16th ,, .	1 case
8th ,, .	4 ,,	17th ,, .	1 ,,
9th ,, .	4 ,,	18th ,, .	1 ,,

In 10 cases, or 15·3 per cent., the termination was by lysis ; in 9 of these the lysis was of short duration and ended between the fifth and eleventh days, but in the remaining one, a case in which each apex was attacked successively, the temperature did not reach normal until the eighteenth day. In those cases which have been designated as terminating in a short lysis, the temperature subsided in the course of three or four days. No permanent fall of temperature was observed, and one or more pseudo-crises occurring before the final drop to normal virtually caused a short lysis. This mode of termination is not uncommon in children.

In 2 cases the termination of the disease was not definitely ascertained, and 9 died before the temperature fell. The termination of my cases, therefore, was :

By crisis	44 cases (2 died)
,, lysis	1 case
,, short lysis . . .	9 cases
Termination doubtful . .	2 ,,
Died before crisis . .	9 ,,

Temperature.—The temperature in children often tends to vary considerably between wide extremes, a high temperature alternating with a normal or subnormal instead of remaining uniformly between 102° and 104° F., as is usual in the case of adults. In this way the temperature frequently has an irregular and remittent or even intermittent character, and such was found to be the case in 24, or 36·9 per cent. of my series. The irregularity of the temperature is not confined to the daily variations of the chart, but is also to be found in the height of the absolute maxima. It is true that in the majority of my cases the temperature was found to reach 103° F. or over (49, or 75·3 per cent.), but in 9, or 13·8 per cent., the highest point was under 102° F. The maximum temperatures of my cases were found to be as follows:

105°–106°	5 cases
104°–105°	17 ,,
103°–104°	27 ,,
102°–103°	5 ,,
Under 102°	9 ,,
? (1 died on admission, 1, chart missing)	2 ,,

Results.—In the series of 65 cases 11 died, giving a total mortality of 16·9 per cent. It must be noted, however, that 9 of the deaths occurred in children under three years of age (a mortality of 29 per cent.), and only one during the fourth year, and one during the tenth. The mortality of my cases according to age is given in the following table:

Age.	Cases.	Deaths.	Percentage.	
1st year	4	2	50	29
2nd ,,	12	4	33·3	
3rd ,,	15	3	30	
4th ,,	10	1	10	
5th–12th year	24	1	4·1	
	65	11	16·9	

These results are more or less in accordance with the statistics of English observers, and must be contrasted with those of some foreign authors. Thus, in Holt's series of 187 cases there were 21 deaths, only one being over two years of age, with a mortality of 11·2 per cent., and in 1295 cases, chiefly of older children, collected from various American sources, the percentage of deaths was only 3. Again, among 579 cases recorded by continental observers* the deaths numbered no more than 5, though here no record of the ages is given. In spite of this it seems generally acknowledged that the mortality during the first two or three years of life approaches 30 per cent., and afterwards falls much lower. In this connection it may be noted that the death-rate in my series from the fifth year onwards was only 4·1 per cent. Of my cases which died 2 had the whole of both lungs affected, 1 both apices, and 1 the whole of one lung, while in the remaining 7 the consolidation was situated in one or other of the lower lobes. The only death above the age of four was in the case of a boy, aged 10 years, in whom the apex of the left lower lobe was affected. He died on the second day of the disease soon after admission to hospital, and in him the disease appears to have been of a very virulent type, for he was taken suddenly ill while at school on the previous day and was dead within thirty-six hours. Six of my cases died between the fifth and ninth days; of these one had both lungs affected, and one succumbed after the crisis as the result of an exploratory puncture for a supposed empyema. One case of double pneumonia died on the eleventh day just after the crisis, and another basal case on the sixteenth day. Two cases survived without a crisis for three weeks, one of which was a double apical pneumonia; and one with the whole of the left lung involved survived for as long as four and a half weeks without the temperature coming down. The fact that no death occurred among the 16 of my cases in which one apex alone was involved supports a favourable prognosis in pneumonias with this distribution in children, and should be contrasted with the usually fatal termination which occurs in such cases in adults.

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* Quoted by Taylor, *loc. cit.*

It is also noticeable that in no case in which death was due directly to the disease did the temperature at any time rise above 104° F., in spite of the fact that 5 cases showed maxima between 105° and 106° F., and 16 between 104° and 105° F., thus showing that the actual height to which the temperature may rise has little bearing on the ultimate issue, though a prolonged high temperature should be regarded generally as unfavourable, as indicating extensive involvement or spreading of the disease.

BRONCHO-PNEUMONIA.

Broncho-pneumonia in childhood is more particularly a disease of early infancy. During the first two or three years of life the greater number of primary pneumonias are lobular, and throughout the whole of childhood nearly all the secondary also. My cases of broncho-pneumonia numbered 85, and of these 33 (38·8 per cent.) were primary, and 52 (61·2 per cent.) secondary—*i. e.* they occurred as either a complication or a sequel of some other disease.

Sex.—In the whole of my 85 cases the sexes were affected equally, 43 being males, and 42 females. The same equality was also to be found when the cases were divided into primary and secondary, for in the primary cases I had 16 males and 17 females, and in the secondary 27 males and 25 females. In the secondary cases the sexes are affected about equally as a rule, but in the primary cases there is usually a slight preponderance of males.

Age.—Amongst children the disease occurs for the most part at a very early age, and after the third or fourth year tends to be uncommon. Thus 60 of my cases, or 70·6 per cent., occurred during the first three years of life, as will be seen from the following table of age incidence :

1st year .	15 cases	60 cases, or 70·6 per cent.	5th year .	7 cases
2nd „ .	30 „		6th „ .	4 „
3rd „ .	15 „		7th „ .	1 case
4th „ .	11 „		8th „ .	2 cases.

The early age at which broncho-pneumonia occurs is generally acknowledged, and Holt's statistics give the incidence of the disease during the first and second years as high as 86 per cent.

Origin.—My series consisted of 33 primary and 52 secondary cases. The predisposing causes of the latter are shown thus :

Secondary to bronchitis . .	7 cases	(13·4 per cent.)
Complicating whooping-cough .	34 „	(65·3 „)
„ measles . . .	10 „	(19·2 „)
„ diarrhœa and vomiting	1 „	(1·9 „)

Site of the lesions.—The lesions of broncho-pneumonia are to be found, as a rule, simultaneously in both lungs : on rare occasions is only one lung involved. In my series the physical signs of the pneumonia were found—

In both lungs in . . .	78 cases
(*In the right chiefly* . . .	*13* „
In the left „ . . .	*12* „)
In the right lung only . .	5 „
In the left „ „ . .	2 „

The parts chiefly affected were the lower lobes posteriorly. It is uncommon for the anterior part of the lung only to be involved, but when this is so the right apex is the most frequent site. Here, as in lobar pneumonia, the tendency is for the right lung to be affected more often than the left.

Onset.—In the greater number of cases the disease begins insidiously, and this is especially the case in the secondary form. Of my 85 cases, 61, or 71·7 per cent., had a gradual onset, and in 11 others the commencement was indefinite ; included in these were all but four of the 52 secondary cases. In only 13, or 15·3 per cent., did the symptoms begin abruptly, and these consisted of 9 primary and 4 secondary cases. In these the onset was not unlike that of lobar pneumonia, the temperature running high, though with a tendency to be less uniform than in that variety of the disease.

Temperature.—Speaking generally, the temperature in broncho-pneumonia is not so high as in the lobar form and is less regular, the remittent or intermittent type being more or less characteristic. In some cases the temperature scarcely rises above the normal, though definite signs of pneumonia are present. These low temperatures are found, as a rule, in very young and debilitated children rather than in the older and more robust. The highest temperatures recorded in my series were:

105°–105·5°	5 cases
104°–105°	14 ,,
103°–104°	20 ,,
102°–103°	14 ,,
100°–102°	26 ,,
Under 100°	6 ,,

The duration of the fever was found to vary considerably, lasting in most cases from one to three or four weeks, but in protracted cases it may continue for three months or more. In 45, or 52·9 per cent. of my cases the temperature had subsided by the end of the fourth week, but a considerable number were found to last from varying periods up to thirteen weeks. The most protracted case in my series was one lasting four months. The duration of the fever is shown in the following table:

1 week	9 cases	45 cases, or 52·9 per cent.	9 weeks	4 cases
2–3 weeks	15 ,,		13 ,,	3 ,,
3–4 ,,	9 ,,		14 ,,	1 case
4–5 ,,	12 ,,		15 ,,	1 ,,
5–6 ,,	9 ,,		16 ,,	1 ,,
6–7 ,,	5 ,,		?	13 cases.
7–8 ,,	3 ,,			

Termination of the fever.—The temperature subsides gradually in nearly all cases—in other words, a crisis seldom occurs. Of my cases 79, or 93 per cent., ended by lysis. In only 6 was there an abrupt termination; of these 4 were of only a few days' duration, one ended in the third week, and one in the fifth. Such cases are stated to be purely pneumococcal in origin.

Results.—I had a total of 39 deaths in my 85 cases, or a mortality of 45·9 per cent. Of the 33 primary cases, 15, or 45·4 per cent., died, and of the 52 secondary cases, 24, or 46·1 per cent., were fatal. My death ratio, therefore, was to all intents and purposes equal in the two classes, the very slight difference being in favour of the primary cases. Other authors, however, have found that the secondary cases show a greater fatality than has been my experience. The mortality of the secondary cases in my series was as follows:

After bronchitis	7 cases	3 deaths	42·8 per cent.
With measles	10 ,,	5 ,,	50 ,,
,, whooping-cough	34 ,,	15 ,,	44·1 ,,
,, diarrhœa and vomiting	1 case	1 death	100 ,,

From this it will be seen that broncho-pneumonia complicating measles has a bad prognosis, and is closely followed by that associated with whooping-cough and a previous bronchitis. The one case complicating diarrhœa and vomiting is insufficient for any conclusions to be drawn from it.

During the first two years of life the mortality is high, 29, or 74·3 per cent., of the deaths in my series occurring during that period, giving an actual mortality of 64·4 per cent. The death-rate then diminishes until the fifth year, subsequent to which a fatal termination is uncommon. The age-mortality in my cases is shown in the following table:

Age.	Cases.	Deaths.	Mortality.	
1st year	15	9	60·6 per cent.	29 deaths, or 64·4 per cent.
2nd ,,	30	20	66·6 ,,	
3rd ,,	15	4	26·6 ,,	
4th ,,	11	2	18·1 ,,	
5th ,,	7	2	28·5 ,,	
8th ,,	2	2	100 ,,	

A sudden onset of the disease in primary cases appears to be of unfavourable import, for of 9 such cases 5, or 55·5 per cent., died, 4 within seven days of the onset, and 1 at the twentieth day. Among the secondary cases a sudden onset occurred in 4, and of these only 1 succumbed.

The temperature also affords some indication of the virulence of the infection, hectic temperatures with high maxima having a specially bad prognosis. Such are generally due to a streptococcal or to a mixed infection. More uniform temperatures are usually pneumococcal in origin and have a somewhat better outlook. The relation of the death-rate to the maximum temperature in my cases was as follows:

Max. temp.	Cases.	Deaths.	Mortality.
105°–105·5°	5	3	60 per cent.
104°–105°	14	7	50 ,,
103°–104°	20	11	55 ,,
102°–103°	14	9	64·2 ,,
100°–102°	26	7	26·9 ,,
Under 100°	6	2	33·3 ,,

These results show that in all cases with a temperature of 102° F. or over the mortality is as high as 56·6 per cent.

A CASE OF PNEUMOCOCCAL PERITONITIS WITH AN UNUSUAL COMPLICATION.

By H. S. Clogg, M.S., F.R.C.S.,

Senior Surgeon to the Evelina Hospital; Assistant Surgeon to Charing Cross Hospital.

Edith H—, aged 5 years. When fifteen months of age she had an illness of three weeks' duration, which we were told was "inflammation of the bowels." Since that time she has been in good health. For a few months past she has occasionally complained of pain in the abdomen, at times worse after food. This pain has not been constant, and has not interfered with the general health. The bowels have always been regular. She has never been sick.

Present illness.—On January the 2nd, 1908, she went to bed in perfect health, but woke in the early morning with severe pain in the abdomen and vomiting. The pain was very severe, causing her, in the first few hours, to frequently scream out. The vomiting was only slight. Hot applications were applied, and castor oil was given; the latter produced a frequent evacuation of the bowels. The motions were not offensive at this period of the illness. The temperature taken soon after the commencement of the illness was noted to be 103° F. The abdominal pain and diarrhœa persisted. The vomiting ceased entirely after forty-eight hours. The temperature ranged from 101° to 103° F. The abdomen became a little distended. The abdomen was tender and a little rigid, especially in the lower part, and more perhaps in the right iliac fossa. On the third day of the illness the respirations, previously normal in frequency, were noticed to be much more rapid. The pulse from the onset was frequent, but more so now, and varied from 120 to 140. The temperature was also a little higher. The child was seen and admitted into hospital on the fifth day of the illness.

Condition on admission.—The general aspect of the child suggested more that of acute pneumonia than that of acute peritonitis. The face was a little flushed, respirations 44 to 56, pulse 130 to 150, temperature 100° F. There was still some pain in the abdomen, but this was comparatively slight. The abdomen was distended uniformly; the greatest tenderness was in the lower part and more towards the right side. The abdominal wall was not rigid, or only so on deep pressure. The whole abdomen was resonant, and no evidence of fluid could be obtained.

Heart.—Area of dulness not increased, apex beat diffuse, maximum intensity in the fourth space in nipple line. No murmurs, sounds not muffled.

Lungs.—Some impaired resonance over the left lower lobe posteriorly. Tubular breathing was heard over this dull area, and crepitations and coarse râles over the right base posteriorly.

Leucocytic count, 15,000.

Diagnosis.—It seemed evident that the child had peritonitis of a kind. She had certainly not the general appearance of a septic peritonitis of five days' duration. The sudden onset with acute abdominal pain, vomiting, diarrhœa, and abdominal distension suggested that she might have pneumococcal peritonitis. The presence of some pneumonia supported this. The evidence of there being any fluid in the abdomen was negative, and it seemed probable that the distension was entirely intestinal. Laparotomy was, therefore, deferred. The respiratory distress, with so comparatively few signs in the chest, seemed to suggest that some pericardial effusion might also be present. Of this there was no positive evidence, neither were the signs of pleural effusion suggestive enough to warrant exploration of the chest.

During the following few days the condition remained much about the same. The physical signs in the chest altered a little from day to day. The dulness of the right chest extended over a larger area and became more complete, so much so that fluid was suspected. Exploration, however, was negative. The abdomen remained distended; tenderness was very little marked; no thrill was ever obtained. An indefinite swelling was thought to be present low down in the pelvis, but this was not certain, and it could not be felt *per rectum*, as it should have been had a definite swelling been present in the pelvis of a child of this age. The mere suggestion of a tumefaction in the hypogastric region made it appear that the inflammation was becoming localised, and hence, in spite of the abdominal distension, operation was postponed in the hope that a localised abscess would form. Slight diarrhœa was now present and the motions were extremely offensive. This diarrhœa lasted only a day or so. Anti-pneumonic serum was given on two occasions without any noticeable benefit.

A little improvement then took place. The breathing became more easy, the pulmonary inflammation showed signs of resolving, the respirations were reduced to 36 per minute, although the pulse never slowed at all. The temperature ranged from 97·6° to 99·4° F. The diarrhœa ceased, and there was no doubt that the abdominal distension became considerably less. An ill-defined induration was now certainly present in the hypogastric region. The remainder of the abdomen was quite soft and supple. As the chest condition seemed to showed signs of improving it was thought advisable to defer operation in the hope that this would still further resolve and the child would be in a better condition to stand the operation. A sudden change, however, occurred. The abdomen became rapidly distended and within a few hours reached enormous proportions. It was everywhere tympanitic, the liver dulness was completely obliterated, and there was increased respiratory distress. The temperature rose to 101° F., and the pulse from 130 to 160. It seemed clear that there was free gas in the peritoneal cavity, and in all probability this came through a perforation of the intestine. The abdomen was immediately opened through a mid-line hypogastric incision. A comparatively small quantity (8 to 10 oz.) of fluid was let out. This was mostly collected in the pelvis, and elsewhere there was only a very little fluid seen. The fluid was very thick, greenish in colour, and in it were great flakes of lymph. There was a quantity of lymph all over the intestines, and the latter were very extensively matted together. Immediately on opening the peritoneal cavity the abdomen collapsed, showing that the distension was due to free gas in the peritoneal cavity. It was useless to attempt to find any perforation amongst the mass of adhesions and so the abdomen was freely drained. Many incisions were made. The thick character of the pus and the almost universal adhesions necessitated the employment of many incisions if drainage was, in any way, to be effectual. Through these incisions the peritoneal cavity was irrigated. The discharge became very offensive. The child died three days later from septic intoxication.

Post-mortem.—*Abdomen :* General adhesive peritonitis ; the adhesions were generally very firm. In places there were tiny collections of very inspissated green pus. Between the diaphragm and the liver was a large abscess, containing about 10 ounces of pus. This was entirely shut off from the general peritoneal cavity. The stomach and intestinal mucosæ showed merely localised patches of congestion ; there was no ulceration. No perforation of the gastro-intestinal tract could be found. There was no general catarrhal condition of the intestine, and the walls were more inflamed towards their peritoneal aspect, and the slight mucosal congestion seemed secondary to this.

Pelvic viscera : The ovaries and tubes were inflamed and adherent. This was probably secondary to the peritoneal infection, for the interior of the tubes appeared normal.

Lungs: Both lungs showed some areas of collapse and pneumonia. The pneumonia was very little marked, the collapse being much more in evidence.

Bacteriology: Films from the pus of the peritoneal exudate showed the presence of the pneumococcus. Various putrefactive bacilli were also present.

In this case the abdominal infection seemed to be the primary one, judging from the clinical history. The pulmonary symptoms did not appear until the third day of the illness. The case is interesting as showing severe abdominal symptoms at first which gradually, in part, subsided. The pneumococcic inflammation practically resolved into two collections of pus—the one in the pelvis, and the other in the sub-diaphragmatic region. The other collections found in the abdomen were very small and the pus less than a drachm in quantity. The diaphragm showed no coarse lesion. Perhaps the most interesting point in the case is the sudden presence of free gas in the peritoneal cavity. This did not arise from any ulcerative or perforated lesion of the intestine, as was shown at the autopsy. That the putrefactive bacilli came from the intestine there can be no doubt; they gained access to the peritoneal cavity through a damaged intestinal wall.

NOTE UPON A CASE OF RUPTURED URETHRA TREATED BY SUTURE.

By Wilfred Trotter, M.S., F.R.C.S.,
Surgeon, East London Hospital for Children; Assistant Surgeon, University College Hospital.

The following note may be of some interest in illustrating two points of considerable importance in the treatment of ruptured urethra which do not perhaps always receive as much attention as they deserve.

E. H—, a boy, aged 11 years, was admitted to University College Hospital on April the 29th, 1907. He gave the history that an hour or two earlier he had been walking on some iron railings and had fallen astride the top rail. Immediately after the accident several drops of blood had escaped from the urethra.

There was a bruise on the inner side of each thigh close to the cruro-perineal junction, and a cylindrical swelling in the perineum obviously limited by the fascia of Colles and stretching forwards into the scrotum. Blood was dripping from the meatus.

An attempt was made to pass a catheter. When the tip of the instrument entered the bulb there was a free gush of blood and an impassable obstruction was met with.

Operation (three hours after the accident).—A Wheelhouse's staff was passed. The point of it could be felt quite distinctly just under the skin in front of the anus. A median incision was made into the perineal swelling. The fascia of Colles was found to be distended by blood, which was escaping into the subcutaneous fat through a small circular opening in the fascia. The latter was divided and the ends of the urethra were readily found near the surface. The urethra was found to be torn across completely with the exception of a narrow strand of the dorsal wall one eighth of an inch wide. The tear was one half to three quarters of an inch in front of the urethral opening in the triangular ligament, and was very irregular, there being much laceration and longitudinal splitting. The corpus spongiosum in the neighbourhood of the rupture was extensively smashed. Deep to it was a cavity full of blood and of the size of a large walnut.

An opening was made into the urethra behind the rupture, and a catheter was passed through it and stitched to the skin so that the urine could be drained away through the perineum. The rent was then brought together with catgut stitches. The resulting union, on account of the irregular laceration, and especially of the great amount of longitudinal splitting, was very far from being even moderately watertight.

The anterior part of the skin incision was stitched up and the posterior part was packed with gauze around the catheter. A fortnight later the perineal tube was finally removed and a large soft catheter readily passed into the bladder through the penis. This catheter was kept in for a few days. A month after the accident the patient was discharged. He was able to pass urine perfectly freely through the penis and the perineal opening was almost completely healed. A large soft catheter passed very readily.

A month later, two months after the operation, the patient was seen again. Micturition was quite normal.

The case illustrates well the remarkable powers of recovery from the severest injuries possessed by the urethra, and how union can occur even when the ends are brought together in the roughest and apparently the most unsatisfactory way. During the operation I was in some doubt as to whether it would not be better to excise the damaged part of the urethra so as to get regular edges for suturing. As is well known, after excision of large pieces of the spongy urethra approximation can be rendered easy by freely dissecting up the corpus spongiosum from its deep connections, and this is quite free from risk of causing sloughing, as the corpus spongiosum is supplied by vessels entering it anteriorly as well as posteriorly. I decided against such a procedure on account of the smallness of the parts, the amount—at least an inch—which it would have been necessary to excise, the presence still of a small strand of the dorsal wall of the urethra, and the known capacity of the urethra for healing when the parts are freed from blood-clot and protected from the urine and from sepsis. The union, however, proved so difficult to effect and so imperfect that at the end of the operation one was not without fear that one had trusted too much to the recuperative powers of the parts. The result, nevertheless, fully justified the method chosen, and enlarged one's conception of the applicability of the method.

A second feature in the treatment upon which it is desired to add a word of comment is the provision of an outlet for the urine behind the point of union. As far as I am aware the value of this procedure was first given prominence to by Bond, of Leicester, who published a series of cases in which it had been used with striking success in all forms of rupture of the urethra. It has the very obvious advantages of not only preserving the line of union from contact with the urine, but also of avoiding the presence of a catheter in the urethra and the disadvantageous effects of the consequent pressure upon, and irritation of, healing tissues. In this case the line of union was thus guarded for a fortnight. At the end of this time a catheter was tied in in the usual way for a few days, solely for the purpose of hastening the healing of the perineal opening.

A CASE OF ŒDEMA PERSISTING SINCE BIRTH.*

By G. A. Sutherland, M.D., F.R.C.P.,
Physician to the Paddington Green Children's Hospital, etc.

L. J—, female, aged 7 months, has been the subject of œdema of the feet since birth. The condition varies only in the degree of the œdema, not in the character. Under ordinary circumstances there is seen to be on each foot marked swelling of the dorsum, the sole, and the toes. The œdema ends abruptly at the ankle, which is freely movable. The dorsal swelling is rather pale and pits on pressure. The sole is tense and swollen, shows no pitting, and is of a pinkish-red colour. This colour disappears entirely on pressure. The toes are also pinkish-red, and are tense, and the nails are partially covered by the swelling around them. When the feet are cold they rapidly become blue or blue-black in colour. When the child is ill in any way the swelling of the feet becomes more pronounced.

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* Exhibited at The Society for the Study of Disease in Children, November the 15th, 1907.

The mother died of phthisis soon after the infant was born. A full family history cannot be obtained. The infant has suffered from gastro-intestinal disturbance accompanied by lichen urticatus. The striking feature about the latter was the appearance on the head, at the age of three months, of large urticarial wheals. These were as large as hazel-nuts, very tense, and white. Typical eruptions of lichen urticatus have appeared about the body and extremities at intervals.

On physical examination no cause for the œdema can be detected. The heart appears to be normal. The urine has been examined on three occasions. On two occasions there was present uric acid but no other abnormality. On the third occasion pus cells and a trace of albumin were detected, the latter being sufficiently accounted for by the former. The hands tend to get blue if at all cold. The eyes are at times noticed to be slightly puffy about the lids, the upper lids being as markedly affected as the lower. The foster-mother states that when the rash improves the feet are more swollen, and when the swelling of the feet diminishes the rash again comes back. The rash referred to is the lichen urticatus.

The nature of this form of œdema is obscure, but probably one may exclude cardiac or renal disease as the source. The blood has not been examined, but there is no definite anæmia. The œdema does not pass off under prolonged rest in the horizontal position. Possibly the association with lichen urticatus lends strength to the suggestion that the œdema is due to a general vaso-motor disturbance, intermittent in its action generally, but constant as regards the circulation in the feet. The outbreaks of lichen urticatus, the blueness of the hands, and the occasional puffiness of the lids show a tendency to disturbance of the peripheral vaso-motor system.

The Society for the Study of Disease in Children.

The provincial meeting of the Society was held on Saturday, June the 20th, at 2.15, cases and pathological specimens being demonstrated in the Out-patient Hall of the General Hospital, the members being received by Sir Thomas Pye Chavasse, Senior Surgeon, and by the Chairman of Council (Dr. George Carpenter): and subsequently at the Children's Hospital, Birmingham, for the reading of papers, Dr. George Carpenter presiding.

Cases.—1–4, Congenital dislocation of the hip-joint (4 cases); 5, Osteomalacia; Mr. Frank Barnes. 6, Congenital syphilis; Mr. Billington. 7, Hereditary optic atrophy; 8–10, Hereditary nystagmus in three generations; 11, Spasmus nutans; 12, Congenital aniridia; Mr. Jameson Evans. 13–15, Cases of unresolved pneumonia; Dr. Foxwell. 16, Hydroa vacciniforme; 17, Granuloma of skin; 18, Lupus of hand; 19, Lupus of eye-lid; 20, 21, Bazin's disease (2 cases); 22, Congenital syphilitic eruption; 23, Favus; 24, Case for diagnosis; Dr. Douglas Heath. 25, Hydrocephalus treated by lumbar puncture; 26, 27, Congenital sclerodermia (brother and sister); 28, Hypertrophy of one arm and opposite leg; Dr. Walter Jordan. 29, Infantile spastic diplegia; Dr. Kauffmann. 30, Deformity of tibia; Mr. A. Lucas. 31, Splenectomy for ruptured spleen at 1½ years; 32, Compound depressed fracture of the skull; 33, 34, Congenital stricture of the anus (2 cases); 35–38, Intussusception (4 cases after operation); Mr. Victor Milward. 39, Cystic hygroma of the face; Mr. Nuthall. 40–47, Types of feeble-minded children (8 cases); Dr. Potts. 48, Pseudo-hypertrophic muscular paralysis; 49, 50, Hereditary enlargement of the phalangeal joints (2 generations); 51, Multiple tuberculous lesions; Dr. Sawyer. 52, Rheumatoid arthritis; 53–55, Heart cases in reference to paper; Dr. Stanley. 56, Transposition of viscera; 57, Congenital heart disease; Dr. Stacey Wilson.

Pathological and Microscopical Specimens.—Tumour of the brain (3 cases); Dr. Stanley Barnes. Specimens of glioma and pseudo-glioma; Mr. Jameson Evans. Ante-natal pathological specimens; Dr. Hewetson. Glioma of retina; Mr. Beatson Hird. Microscopical specimens of bronchiolectasis; Acute tuberculous cerebro-spinal meningitis; Dr. James Miller. Lymphadenomatous cervical glands; Mr. Nuthall. Osteo-sarcoma of the heart; Microscopical specimens of granular nephritis in children; Dr. Sawyer. Excavation of lung; Cerebral thrombosis; Dr. Stanley. Microphotographs of various organs in the status lymphaticus; Organs from cases of general rheumatic infection in children; Dr. Wynn.

On a little-known Type of Amblyopia in Children.—Mr. Sydney Stephenson. The reader of the paper called attention to a class of case which came for advice to the out-patient department with lessened acuity of vision unimproved by glasses, whose discs on ophthalmoscopic examination presented the appearance of post-neuritic atrophy. The atrophic changes, nevertheless, are not complete, and may indeed be so slight as to escape recognition in the absence of careful ophthalmoscopic examination. In the cases concerning which it was the object of the communication to draw attention to more particularly, the appearances of the disc are best characterised as those of "incomplete post-papillitic atrophy of the optic disc." They are bilateral, though possibly sometimes more pronounced in one eye than in the other Inquiry into the child's history often elicits the fact that when an infant there has been a "cerebral" or "meningitic" illness, marked by "fits" convulsions, headaches, vomiting, constipation, retraction of the head, temporary paralysis, squint, unconsciousness, and so forth. On recovery from the attack sight was found to be partially or totally lost, but has since been more or less regained. The conclusion is almost inevitable that an infantile meningitis or encephalitis was accompanied by optic papillitis, and that both the general and the local conditions had to some extent been recovered from. The incomplete optic atrophy seen later by the ophthalmic surgeon, then, is in this view to be regarded as a sequel to the meningitic papillitis. The type of case indicated rather than described above must be carefully distinguished from the other kinds of temporary blindness which may occasionally arise under somewhat similar conditions, viz. "Fleeting Amaurosis" ('Reports of The Society for the Study of Disease in Children,' 1902), and "Post-eclampsic Amaurosis" (*ibid.*, 1903). The former is met with in infants suffering from basal meningitis, and sight under such circumstances appears to be wholly lost without ophthalmoscopic signs, the children subsequently slowly recovering both vision and health. The second class appears to result in convulsions lasting for some hours, days or even weeks. When the child regains consciousness he is found to be blind without ophthalmoscopic signs, and as accompaniments may be noted aphasia and hemiplegia of a temporary or of a more lasting type. The suggestion is that the nerve storm might involves the visual cortical centres as well as the motor centres or speech centres, the period of discharge being followed by a period of exhaustion. The distinction between the several forms of blindness mentioned in the course of the paper can be distinguished only by ophthalmoscopic examination. In the acute cerebral amaurosis in the post-eclampsic cases the optic discs show no changes, whereas in the other class they exhibit incomplete atrophy. The distinction, then, can be difficult only when a child is so young as to resist a full ophthalmoscopic examination of the eyes.

On Two Cases of Status Lymphaticus.—Dr. OTTO KAUFFMANN (Birmingham) (introduced). He said they were really cases of Hodgkin's disease or anæmia, and he wished to elicit a discussion on the relationship between status lymphaticus and those diseases. The first case was that of a school girl, aged 12 years, tall, slim, pale, but well grown, very intelligent, and with fairly good muscles. She entered the hospital in the early part of this year. There were enlarged lymph-glands on both sides of the neck, both supra-clavicular regions and both axillæ, but none in the groins. The glands were of the size of hazel-nuts and discrete, except in the axillæ. A large soft swelling enveloped the bulging pectorals, and obscured the individual lymph-glands. There was an enlargement of the area of splenic dulness, and when she first came in the spleen was doubtfully palpable, but it soon became obviously so. It, however, never exceeded two inches below the left costal arch. She had no internal pressure signs; the blood looked pale, but showed no marked departure from the normal.

He thought the case might fairly be called one of Hodgkin's disease.

The teeth in both jaws were very carious, and the breath smelt foul. Her temperature was not steady: it rose to 101° F. and sometimes even to 102° F. But for a week before her discharge in April the temperature was again normal. Except for the improvement to her general health from rest and good food, he did not trace any benefit to treatment. The glands did not vary much in size. She did not react to the Calmette test, and there were no signs suspicious of tuberculosis in any part of the body. From February the 27th to March the 11th she was taking iron continuously, but neither the hæmoglobin nor the red cells improved. The counts were all made at the same hour of the day. From March the 11th to the 31st she was on liquor arsenicalis 5 ♏ three times a day. Her red corpuscles then rose a little, the white ones fell a little, and the hæmoglobin improved. From March the 31st to April the 22nd she had mercurial inunctions, and the white corpuscles fell a little as also did the red ones. The treatment was changed because her general health did not seem so good as he hoped should be the case under arsenical treatment.

The other case was that of a girl who died. Her case might be regarded either as one occupying an intermediate position between splenic anæmia and Hodgkin's disease, of the type associated with enlargement of the spleen, or as one of Hodgkin's disease which went on to severe anæmia. Multiple hæmorrhages and an acute inflammation of the larynx with œdema, necessitating intubation, set in, finally killing the patient by exhaustion. The first thing noticed was enlargement of the spleen, which, even on admission, was very big, and which, post mortem, reached across the mid-line and down into the false pelvis. She was a working girl, aged 21 years. She was admitted into hospital at the latter end of February, and died in May the same year. After death many petechiæ were found on the heart and pericardium. The thymus was normal, but the glands all over the body were greatly enlarged. There was no caseation, although in the lungs there were old tubercular foci. The liver was congested, with round-celled infiltration of the interlobar spaces. The spleen was enormous, and there was much perisplenitis. The kidneys showed round-celled infiltration, particularly of the cortices. There was poikilocytosis, but there were no macrocytes. The blood count was $2\frac{1}{2}$ millions red corpuscles and 7000 white corpuscles per c.mm. The hæmoglobin index was slightly over 1. The treatment by arsenic showed only an evanescent improvement. None of the drugs tried materially improved the condition of the blood. His object in reading the paper was to draw attention to the very improbable connection between those cases—and similar ones, because those anæmias were difficult to place in their proper compartment—with the state which had been called status lymphaticus, or status pyæmicus. Probably members had seen at the General Hospital the beautiful specimens which Dr. Wynn had placed there, showing the changes met with in that disease. He asked whether it was the general experience that the status lymphaticus developed into Hodgkin's disease, or was apt to do so, or some other form of pseudo-leukæmia. He supposed that in all cases of status lymphaticus it was necessary that there should be a hypertrophied thymus; that was not so in the fatal case. Still, it presented the picture of that disease, and he could not help thinking that there was so intimate a connection that a case of status lymphaticus might pass into one of Hodgkin's disease, and that, as had been shown by the other case, that condition might pass into pernicious anæmia.

Dr. Haynes (Leamington) (introduced) wished to call attention to the value of mercury in some of these cases of lymphadenoma. Long before there was any discussion on blood counts a girl, aged 15 years, came to him with a large mass of glands on the left side of the neck, so large that the surgeon declined to operate on them. The enlargement went on until the tumour was of the size of a cocoanut, and the other side was also very big. He put her on perchloride of mercury, which she continued taking for three years, beginning with $\frac{1}{16}$ of a grain and going up to $\frac{1}{10}$ three times a day. Both glandular masses entirely disappeared, and she was now alive. It showed in a remarkable manner the value of mercury, and that it might be continued without producing symptoms of ptyalism. He believed the perchloride seldom salivated. He could trace no history of syphilis in either parents. Her mother died from hemiplegia at the age of 59 years, and her father was now in the lunatic asylum, aged 75 years; the latter had Argyll-Robinson pupils.

Some Factors in the Causation of the Neuroses.—Dr. Walter Jordan (Birmingham) (introduced). The reader first dwelt upon the hereditary factor in the causation of the neuroses (the general neurotic condition to be observed in many children), and asked whether we are inclined to attribute too much importance to it, to regard its presence as often proved on very slender evidence, and even to assume it when there is no direct evidence whatever of its existence. He admitted the supreme importance of hereditary influences in many cases of neurotic children, but he asked was it not overdone? Has it not so engrossed the attention that post-natal circumstances still active and possibly capable of modification have been overlooked, with the result that treatment has had to remain vague and general when it might have been direct? Is the nervous system of any child so congenitally defective that in spite of proper treatment and education from the first the child must grow up neurotic? The answer to that he believed to be "Yes," but, apart from imbeciles, of very few. Next, is the nervous system of every child so congenitally perfect that no illness or error of training can render it neurotic? The answer to that he believed to be "No." Both these answers, if correct, emphasise the importance of the post-natal causes of neuroses. Chronic constipation he viewed as an important factor in the production of neuroses, and was a condition which called for careful continuous treatment at skilled hands, instead of spasmodic domestic medications. Another causation of neuroses which is quite frequently entirely overlooked is septic tonsillitis of the follicular or lacunar type, which, for some reason or other, even when it causes marked enlargement of the bowel, frequently gives rise to no discomfort. But what does arouse attention is the accompanying adenitis. No condition is more liable to become chronic or more prone to recover than this variety of tonsillitis, and the injury done to the general health of children by it is incalculable. It is at the back of a great deal of the nervousness, naughtiness, and irritability for which so many children are brought to us. Thus we may say whether "they can help it," or whether there is something really wrong with them. Other post-natal causes he did not propose to deal with, *e.g.* rickets and rheumatism. Over-pressure in education he considered to be a subject for vigilant inquiry, as well as over-pressure of attention where parents, over-proud of the way in which their infant takes notice, have absolutely exhausted at will an incessant stream of more or less dazzling stimuli. He thought that treatment directed to the lines he had indicated would lead to more practical benefit than time expended in minute inquiries as to whether a great aunt of the patient did not suffer from migrane, or a brother's cousin from religious mania.

Dr. Charles W. Chapman said he was sure that constipation and tonsillitis often went together, and if the patient were given a purge often the throat would get better. In children constipation often had an effect on the nerves; they often had what was known as diarrhœa, which he attributed to lumps in the colon which acted as irritants, in the same way as did a grit in the eye. It was not necessary to go far for evidence as to the effect of constipation in producing low spirits and a gloomy outlook: the pessimistic Psalms would show that. If the writer of those Psalms had had a blue pill and a black draught twice a week those Psalms would probably not have been produced. He had now under care a child which had been the victim of over-pressure in school matters and improper feeding, a case with which Mr. Tubby had had something to do. Although living at the seaside she was kept indoors the whole day, and had special lessons, succeeding each other practically without a break. The child had a white face and a dilated stomach, and was as jumpy and nervous as possible. He regarded the paper as a very valuable one.

Dr. George Pernet said that one of the points of the paper was its attitude on heredity. He agreed with the author that the meanings attached to the word by different people constituted a great difficulty, and it really ought to be tabooed by the medical profession, members of which sometimes so used it as to show that they regarded it as a kind of refuge for the destitute. Heredity was no longer spoken of in the profession in connection with tuberculosis and leprosy, and he was satisfied that syphilis was not an inherited disease—that syphilis did not appear in a child unless the mother had it at the birth. In regard to neuroses, was it any wonder that children were neurotic when the homes in which they lived were observed? One neurotic child was brought to him as he happened to be a friend of the father, and the child was trying to keep up with children two years older, and was being taught several "ologies," including, strange to say, physiology. The tremendous part played by environment in the production of neurosis was often overlooked, and psychology and philosophy played a very important part in medicine. He wished to allude to the theory of Bird, of Edinburgh, in regard to the germ cells, in support of which there seemed to be a good deal of evidence. It took the view that the human body was nothing more than the scenery or setting for the activity of the germ cells, and if that were so, the fundamental ideas about heredity needed to be changed.

Dr. Edmund Cautley said no doubt most of those present would agree with the views put forth by Mr. Pernet if skin diseases were meant, but he doubted whether the term was as much abused as Mr. Pernet seemed to think. He, Dr. Cautley, did not doubt that heredity played a very important part in the production of a large number of diseases, more especially so-called neurotic affections. There was an old saying that one could not gather grapes from thorns nor figs from thistles, and if there was a strong neurotic heredity there was likely to be a neurotic child, even apart from such complications as constipation or lack of fresh air and sunlight. It would be dangerous to attach too much importance to any one factor in the production of neurosis, because neurotic children were met with under the most perfect external conditions and with a good inheritance. The most robust country children apparently would be found to develop habit-spasm, and that could not be attributed entirely to local surroundings. On the other hand, children living under the most insanitary conditions, who had alcoholic parents, or even epileptic or insane parents, and who lived in a confined atmosphere, would develop into normal healthy adults. In fact, he was inclined to regard constipation as a sign of the torpid rather than the neurotic child. He did not agree as to the importance of constipation in those cases, but otherwise he agree with the views the author had advanced.

Dr. Jordan, in reply, said he agreed with Dr. Cautley that too much importance must not be attached to any one factor in the causation of neuroses; it was only because he thought too much stress was laid on heredity as a cause that he had contributed the paper.

The Prognosis of Heart Disease in Children.—Dr. Douglas Stanley (Birmingham) (introduced). The reader said one of the most important problems that confront us is the future of a child who has a central valvular lesion. That future depends in great measure on the child's social environment. He thought we were inclined to make up our minds concerning the future at too early a date in the history of heart lesions in children. From his observations, extending over a number of years, he was certain that great improvement may and does take place. If, however, the lesion be a severe one with much valvular deformity, if there be excessive hypertrophy, especially if there be any pericardial adhesion, or if there be any reason to suspect pericardial adhesion, the outlook is bad. He remarked that it is difficult to say exactly what denotes a severe mitral lesion, but when the murmur varies under observation, especially if a shifting diastolic be present as well as a systolic, he regarded the lesion as severe. If a child with cardiac valvular disease grows there is a better chance for the heart than if he remains undersized and puny. That point he did not think had been sufficiently emphasised. The period of puberty requires particular attention, and it is just at this time in deference to what we call civilisation that the strain of education is greatest. It is then that there should be the greatest care and a period of daily rest on the back to compensate for rapid growth of the great cardio-vascular changes.

Dr. Charles W. Chapman said it was very cheering to hear the hopeful view of such cases. He had felt very strongly that to say that the prognosis of a child with valvular lesion was bad was wicked, as many of those cases did wonderfully well. He had as patient an old lady, aged 76 years, who was well, but still had a presystolic murmur. A child with aortic regurgitation if it grew fast would have faintness due to cerebral anæmia, but congenital cases often improved with treatment, and there was no justification for an universally gloomy prospect. In some congenital cases he had seen the murmur entirely disappear. Cases must get better, as they were very seldom seen on the post-mortem table. Also in the case of children the parents as well as the child had to be considered in giving a prognosis. A bad prognosis deprived the parents of hope and they had the idea that all treatment would be unavailing. Even if treatment would extend the life three or four years, it was an important matter for the parents.

Dr. Porter Parkinson said he thought Dr. Stanley had brought forward a very important point in emphasising the growth of the child. There was no question in the minds of those who followed those cases that, in severe cases especially of mitral stenosis, stunting of the growth was very common, and it would be useful to make a monthly record of the child's weight, to ascertain the extent of its progress. As to the examination of the heart itself, he always thought that inspection and palpation were most valuable methods for arriving at a prognosis. The mere fact of there being a murmur in one or other situation seemed to be of comparatively little importance compared to the condition of the heart-muscle. It was probably owing to the malnutrition of that muscle that the hospital cases did worse than the private patients. In the latter more attention could be paid to diet and rest, not only for a week or two, but even for months and years. Those two factors he regarded as of more importance in the heart disease of children than the administration of any drug.

Dr. Edmund Cautley said that in his opinion the prognosis in heart cases in children varied a good deal according to whether the inflammation was recent or of old standing. Recent inflammations were generally rheumatic, and in them the prognosis did not depend so much upon the murmurs as upon whether or not myocarditis was present. Where there was myocarditis the prognosis as regards recovery was much worse than if there was a systolic mitral murmur. And pericarditis affected the prognosis considerably. The prognosis was bad in pericarditis, and that was nearly always combined with myocarditis, with subsequent adhesions. The outlook was most favourable in endocarditis. For many years the tendency was to base the prognosis on the heart lesions, but as a rule the heart lesions could be left out of account apart from any effect on the heart-muscle. The regurgitant murmurs were much less serious than those due to narrowing of the orifices. The outlook in simple mitral regurgitation in children was very favourable; the bulk of them got well. But the prognosis of mitral stenosis was distinctly unfavourable. The prognosis of aortic regurgitation compared with that of aortic stenosis was distinctly good; many cases lived to a good age and did hard physical and mental work. In all those cases one had to bear in mind the liability to recurrent attacks. Where there was a strong family history of rheumatism, and the child had had several attacks of that disease, the prognosis was less favourable than if there was a mild attack of rheumatic fever and only mitral regurgitation. The prognosis was worse in severe rheumatism, because the poison attacked an already weakened heart. That was especially the case in children, because sometimes there would be very little pain, and he frequently saw children brought to the hospital suffering from advanced dilatation of the heart, generally with mitral regurgitation, where there had not been sufficient pain to attract attention. For that reason rheumatism rendered the prognosis of heart disease in children worse than natural.

Diagnosis of Urinary Tuberculosis in Children.—Mr. Leedham-Green. The reader said our views of urinary tuberculosis have completely changed during the last few years. Instead of regarding it as a relatively rare disease, which when present is difficult to alleviate and hopelessly incurable, we now know that the disease is exceedingly common, and when recognised early and the primary focus removed of distinctly good prognosis. We know further that the view held for so long and so stoutly defended by surgeons, that the primary disease begins in the bladder and thence spreads along the ureters, causing a secondary infection of the kidneys, is entirely wrong. The disease almost invariably begins in *one* of the kidneys from whence it spreads to the bladder. The modern successful treatment of urinary tuberculosis depends upon the early detection and removal of the primary focus. At present the profession are scarcely alive either to the frequency with which the urinary organs are affected with tuberculosis or to the significance of the vague early symptoms suggestive of its presence. Kapsammer recently examined the post-mortem records for ten years of the Vienna General Hospital, and found that there had been 191 cases where tuberculosis of the kidney had been found at the autopsy. Of all these only two had been rightly diagnosed during life, four wrongly, and 185 not diagnosed at all. Of the 185 undiagnosed in sixty-seven cases only one kidney was involved. The reader then enumerated the following conditions: albuminuria of adolescence, essential renal hæmorrhage, chronic nephritis, nocturnal enuresis, all of which might be the diagnosis rather than the correct interpretation, viz. renal tuberculosis. Centrifuging the urine and examining the deposit, however, revealed the true state of affairs by the discovery of both the bacilli. There are two points of diagnostic importance in the detection of tubercular disease of the urinary organs, viz. firstly, the attention which should be given to the slightest disturbance, be it discomfort or undue frequency in the act of micturition, and, secondly, that the routine examination of a urine should include a *bacteriological* as well as the ordinary chemical and microscopical one. For it is in this way and this way alone that the suspicion of tubercle is likely to be raised whilst the disease is still in its early stages and most amenable to treatment. The systematic examination of the urine of all patients suffering from albuminuria irrespective of whether pus or blood is present will reveal the presence of tubercle in a suprising number of unsuspected cases. He advocated the collection of the urine *for twenty-four hours*, the addition to it of a little carbolic acid, the whole to be placed in a tall cylindrical vessel for twenty-four hours, subsequent centrifugation of the deposit, and the preparation of stained films. If this be done it will rarely happen that specific bacilli cannot be detected. A suspicion of tuberculosis should always be awakened when, in spite of pus cells being present in the urine, none of the usual pyogenic microbes are found. Failing detection by this method in a suspected case subcutaneous or intra-peritoneal injection into a guinea-pig was advocated. The opsonic index, Calmette's conjunctival reaction, or Pirquet's cutaneous reaction to tuberculin are additional tests in such a case. He had found Calmette's reaction far more valuable than the opsonic index. The only reaction that gives a clue to the site of the infection is that produced by the subcutaneous injection of Koch's old tuberculin. There is evidence to show that if used continuously in suitable surgical cases it is a highly valuable diagnostic agent, for the reaction which follows its use frequently, though by no means always, indicates through localised pain or tenderness the site of the trouble. In tuberculosis of the urinary organs the injection often produces such a temporary alteration in the character of the urine by the presence of pus cells and tubercle bacilli as to clear up all doubt as to the nature of the trouble. The next step in the diagnosis is the detection of the primary focus and the determination of the extent of the disease, to determine the condition of the two kidneys and the bladder. In practice it is necessary to determine (*a*) whether the bladder is involved, and, if so, to what extent, and (*b*) what is the condition of each kidney. Special attention should always be paid to the condition of the ureter. If the kidney is tubercular the patient will generally complain of pain on pressure being made over the course of the ureter, more especially at the hilum of the kidney at the point where the ureter passes over the brim of the true pelvis and at its entrance into the bladder. Rectal examination is valuable; when affected by tuberculosis the ureter can almost always be felt as a cord-like structure, indurated and sensitive. The extent of the involvement of the bladder may be roughly gauged by its tolerance of distension. But to gain anything like an exact idea of the condition of the urinary organs a cystoscopic examination is essential. Cystoscopy can be practised even in the youngest girls and in boys over eight years of age. In the early stages of kidney tuberculosis the bladder may be quite free from ulceration or gross lesions of any kind, but it is rarely that a careful inspection of the opening of one of the ureters does not show some indication of the trouble, such as hyperæmia and inflammatory œdema of the lips of the opening, pouting, gaping, or retraction of the orifice. If the tubercular lesions are grouped wholly or largely round the mouth of one ureter, the rest of the bladder-wall being healthy, there is strong presumptive evidence that the kidney on that side is the origin of the trouble. But every now and again it is found that the lesion in the *bladder* is most marked on the *opposite side* to the affected *kidney*. Or, although both kidneys are severely infected, the bladder trouble is localised round one ureter only, and again, and not infrequently, though only one kidney is affected the whole of the bladder is ulcerated. A valuable adjunct to the simple cystoscopic examination is the so-called chromo-cystoscopy, viz. the observing by means of a cystoscope the excretion by the kidneys of a pigment (carmine blue) injected subcutaneously. A jet of blue-black urine will be seen to be squirted from time to time into the bladder by the peristaltic contractions of the ureter. If the urine is seen to be entering the bladder in regular forcible squirts of dark blue fluid from both ureters the presumption is that both kidneys are healthy. Interference with or absence of this arrangement points to the diseased organ. Chromo-cystoscopy rarely fails to indicate which kidney is the chief seat of the disease and from which the infection of the bladder has sprung. Too much reliance must not, however, be placed upon it, for though gross lesions are generally clearly indicated, small, though serious ones, may not be shown. Thus, because the blue pigment is seen issuing from both ureters it does not necessarily mean that both kidneys are sound or free from tubercle. As an adjunct to our diagnostic measures it is most valuable, but it lacks the necessary delicacy which it is so desirable to obtain when deciding whether nephrectomy is permissible or not. The only way in which a really accurate knowledge of the condition of the kidneys can be gained is by collecting the urine as it is secreted from each kidney separately. Unfortunately, the finest catheter cystoscope which can be made is too large to permit of its passing down the urethra of a boy under twelve or thirteen years of age, consequently there are many cases where the catheterisation of the ureters cannot be undertaken in children. In some cases, however, there are numerous tubercle bacilli in the urine, with perhaps an occasional attack of transitory hæmaturia, when neither the simple, nor the chromocystoscope, nor palpation enable one to say on which side the lesion is present. To decide the point an exploratory nephrectomy may be made, but it is an operation of considerable severity for a child, and may be attended by severe hæmorrhage difficult to arrest. A much simpler procedure is to expose the ureter subperitoneally by a small incision in the semilunar line of the abdominal wall, open its lumen by a small longitudinal cut, and insert a fine urethral catheter, and so collect the urine separately. When the examination is completed a fine stitch closes the opening in the ureter, which is then dropped back into its place and the wound drained for a day or so. Provided the urine from the two kidneys has been collected separately there is rarely any difficulty in determining the site and extent of the disease and the functional activity of each kidney.

Some Types of Feeble-minded Children and their Significance.—Dr. Potts. The reader said that in connection with feeble-minded children Birmingham had always taken a forward part, and it was one of the first towns to institute special schools, and its After-care Committee which concerns itself with the care of these children after leaving school was the first of its kind. Scientific observations have not been neglected, and the observations made in the special schools and other institutions of that city have formed to a large extent the basis of the present paper. For some years it had appeared to him that there was a close connection between the type of a feeble-minded child and its origin. There is nothing extraordinary in this idea. The merest tyro often recognises the offspring of tubercular and syphilitic stock. Why should not our discrimination in such directions be extended. All observers recognise in a certain number of different types of these children which are readily distinguished. Why should not some of these types have a definite heredity? In regard to the feeble-minded the prognosis is of peculiar importance. Many cases are brought, not so much for diagnosis but for an opinion as to their prospects. He then drew attention to the physical characteristics of Mongols and asked if we can associate anything definite with this type? He was in agreement with Shuttleworth, who expressed the opinion that such are essentially impoverished children, that their peculiar appearance is really that of a phase of fœtal life, some defect of formative force being usually traced in their intra-uterine life. A family history of phthisis is without doubt usually to be found in association with this type, but he did not regard phthisis as the essential ætiological factor. The prime cause appeared to him to be the poor physique of the mother. He next reviewed the type called simple congenital, which possess no marked deformity of hands or limbs, but they have vacant expressions and display stigmata of degeneration. In making a diagnosis the important point to remember is that the stigmata of degeneration tend to be multiple, instead of occurring singly as in normal individuals. The anatomical irregularities take the form of obliteration or exaggeration of normal markings, such as the acute helix or other parts of the ear, or consist in marked diminution in size of such important landmarks as the mouth, orbital fissure, or lower jaw. The teeth are often irregular and may be arranged in two rows, while the ear is planted too far back. The abnormalities are chiefly to be found in the face, head, and hands, the group well described by Fletcher Beech being without much difficulty quite definitely marked off. In his experience this type is pathognomonic of an insane or feeble-minded ancestry—mental incompetence is their birth-right. When the public at last recognises the necessity of segregation this class ought to be considerably diminished. He also compared Fletcher Beech's assertion that these cases, unless of a very low type, improve very much under proper education and training. He next dealt with the *neurotic type*, with a classification on a different basis. This may include Mongols, hydrocephalics, and other groups distinguished by cranial configuration. The chief characteristic is weakness, both mental and physical. The power of attention is almost *nil*: muscular acts are conducted in a weak and listless fashion. This type he had little doubt was indicative of an alcoholic heredity. He believed careful observation and full inquiry would result in definite knowledge with regard to other types. For instance, it would be possible to confirm what Shuttleworth has said of the microcephales that the prognosis is favourable or otherwise in proportion to the size of the head. It is well to remember that this only holds good till the size of the head approaches to the normal, for in the macrocephalic or hypertrophic cases, as they are sometimes called, the larger the head the more stupid the child: the unfavourable element, therefore, is the extent of deviation from the normal. In this connection it is interesting to note the experience with regard to the group of defective children who are normal in appearance, well developed, and often good looking, and who can only be distinguished by an intellectual examination: the prognosis here is bad. In the words of Langdon Down it is inversely as the child is comely, fair to look upon and winsome. The last type is the "moral defective." This, again, is based on a different classification, viz. the social conduct. It would never do to explain many cases of wrong-doing by inclusion in this group, and as a matter of fact his observations in prisons have convinced him that only very few of those found there can plead this abnormality as a justification. Still, he believed that this type does exist, and that its recognition is important.

The Treatment of Congenital Dislocation of the Hip.—Mr. FRANK BARNES. The reader remarked that it would suffice if he could prove to the satisfaction of the Society that it is upon the early recognition and, before all, upon the early treatment of this condition, that the best results are obtained from a routine, one of the most tedious in surgery, and one from which practical results are not likely to be obtained before twelve or eighteen months have elapsed from the onset. He then gave a history of the disease from the time of its discovery by Dupuytren in 1826, and said that the use of X rays had undoubtedly contributed in the highest degree to the adequate understanding of the methods of cure. It has been found that an acetabulum of fair depth and development is common, especially in the younger cases. The open operation also demonstrated another fact, since confirmed by the radiograph, and that is that in old-standing cases the head of the femur frequently developed a depression on the ilium, a sort of secondary acetabulum, in fact, which, to some extent, acts as a socket for the head and also limits its movement upwards. It appears that the depth of the acetabulum varies with age, or put in another way it depends for its normal development upon the apposition of the head of the femur, and this is the fact around which centres the modern treatment of congenital dislocation. The marked projection of the upper lip of the acetabalum with its buttress of bone running into the anterior inferior spine is a development consequent upon the transmission of the weight of the body through the ilium on to the heads of the femora, and, therefore, an essential part of the treatment is that after reduction the child should be made to walk with the head in its proper position. When several years have elapsed before treatment this buttress is wanting and attempts at reposition naturally fail. It is impossible to over-estimate the advantage of age in the light of treatment. Not every case of congenital dislocation can be successfully dealt with, whereas after a certain age very few indeed are amenable to treatment, and this age he was inclined to put at five or six years. The reader then went on to mention a few of the difficulties he had encountered in the reduction of the dislocation. He had found that when the obstacle to reduction lay in a contracted anterior capsule which levers the head out as soon as it is in position, a good plan is to fix the limb temporarily for a week in the flexed and over-abducted positions; this stretches the tight portion and reduction becomes much easier on the second attempt. Frequently it becomes necessary to use the tenotome to overcome resistant structures, and especially with regard to the adductor muscles, which have become shortened. These not only oppose reduction, but act as a lever, pushing the femur backwards, hence it is sometimes advisable to cut the adductor longus near its insertion into the pubes, in order to ensure greater stability during the first month or so of treatment. As soon as possible after fixing in plaster-of-Paris—frog position—the child is encouraged to walk. His plan is to keep the child in the recumbent position for a month or five weeks in the original plaster case, until the various structures have settled down and become accustomed to the new position. Then a new case is applied, and the child begins to walk either by means of a high boot or a patten, or, in the case of double dislocations, with a stool or chair. This position is maintained for six or eight months, and then the limb is gradually brought down, still being held by means of plaster cases until the child is able to walk almost naturally. During this time it is very necessary to have occasional radiographs taken so as to ascertain the position of the head, and especially during the first few months. It is the ambulatory treatment which constitutes the essential feature of the modern method; the socket is deepened by the natural process of the pressure of the head of the femur, and this is the lesson which has been learned from the secondary hollows developed in old-standing cases, and from the natural growth of the normal acetabulum. The probability is that in the majority of cases the acetabulum is not to blame in the first place, but that the original cause is some malformation *in utero* combined with an abnormal laxity of the capsule, and that the acetabular changes are due to a secondary and not primary lack of development. In certain cases a cure may be looked forward to in about twelve or eighteen months, and in a few all apparatus may now be discarded, but in a certain number of the cases a hip splint, in the form of a pelvic band, and thigh support should be used for some two or three years afterwards. In conclusion he said that his paper did not pretend to be even a summary of the various conditions governing either the treatment or the pathology of congenital dislocation of the hip, but merely a plea for the better understanding of the paramount importance of two factors, viz. in *early recognition* and *early treatment.*

Mr. A. H. Tubby said that as the time for the meeting had expired he would be very brief. He complimented Mr. Barnes on an excellent *resumé* of the subject, and on most points he, Mr. Tubby, was in accord with the author. If he were asked what were the three most important points in the prognosis of those cases he would say: First, the age, secondly, the condition of the acetabulum (as to the development of the posterior lip or not), and thirdly, the shape and outline of the head and neck of the femur. With regard to the position which the head took in cases of congenital dislocation, it was usually stated that the head was almost always posterior. His own experience latterly had been perhaps nearly unique, as he had seen many dislocations in which the head had been anterior; and he suspected that in those case a natural transposition had taken place from posterior to anterior. The difficulties in the treatment of that condition were really immense, and what was still wanted, he thought, was a good criterion of actual replacement of the head. The X rays could not be entirely relied on in that respect, as the head might be slightly in front of, or slightly behind, the acetabulum, and the shadows then overlapped. He had often seen cases shown at societies as cures, but had refrained from making himself objectionable by criticising them. He considered that a cured case must, to be so regarded, fulfil certain conditions. That which he regarded as most important was the position of the head in relation to the femoral artery. The head of the femur should lie almost exactly underneath the femoral artery as it passed through Scarpa's triangle. In many cases of anterior transposition the head did that, or nearly so, but the head of the femur would be found to be much too high in the groin. Such cases were not completely cured. The head of the femur must occupy the same relative position in the two thighs. Secondly, having ascertained that the head of the femur was in good position, it must be stable. The best way to ascertain that was to take hold of the thigh low down, get someone to take some of the weight of the pelvis, and lift the pelvis up, with the head pushed back into the socket. If the head was secure one would find that one could lift the pelvis off the table by taking hold of the femur half way down and raising it up from the couch. Possibly there were other criteria also.

On the proposition of the Chairman, the meeting passed a cordial vote of thanks to the Chairmen and Committees of the General Hospital and the Children's Free Hospital, Steelhouse Lane, for their kindness in allowing the Society the use of their splendid institutions.

Philadelphia Pediatric Society.

A MEETING of this Society was held on Tuesday, June the 9th, 1908, J. P. CROZER GRIFFITH, M.D., President, in the Chair.

Sequelæ to Epidemic Cerebro-spinal Meningitis.—Dr. HOWARD CHILDS CARPENTER showed a case of contractures following epidemic cerebro-spinal meningitis in a boy, aged 8 years. The child had had a virulent attack of meningitis, during which he became blind, deaf and partly paralysed. Hearing and sight returned to normal, but the paralysis was followed by contractures of the left arm and both lower extremities, which have persisted up to the present, fourteen months since the onset of the meningitis.

Dr. B. FRANKLIN ROYER showed a boy, aged 3 years, born at term. His only illness began April the 29th, 1907, with great restlessness, prostration, vomiting and apparent headache. He entered the Municipal Hospital the next day, then twenty months old, with typical epidemic cerebro-spinal meningitis. Kernig's sign was doubtful. McEwen's and Babinsky's signs were both absent. There was a petechial eruption over the chest and extremities, but no herpes. Lumbar puncture yielded one and a half ounces of cloudy fluid without organisms, giving histologically 97 per cent. polymorphonuclears and 3 per cent. lymphocytes, with a blood estimation of 27,800 leucocytes per c.mm., 89 per cent. of these being polymorphonuclears, 9 per cent. large lymphocytes, and 2 per cent. small lymphocytes. Puncture was repeated on the seventh, seventeenth and twenty-seventh days. The count changed greatly until the twenty-seventh day, when the polymorphonuclear cells were 80 per cent. and lymphocytes 20 per cent. Meningococci were found on one examination. Temperature remained hectic for three weeks. Internal strabismus was noted on the seventh day, conjunctivitis of the left eye with a purulent discharge on the fourteenth day, with some improvement by the sixteenth day. Blindness of the left eye was first noted on the twenty-second day, with a greenish-yellow background on looking into the pupil. At the time of discharge the left eye was blind, a curious yellowish spot being visible on the posterior surface of the lens apparently.

Ten months later he was found to be a well-developed, healthy child, whom his mother considers brighter than were her other children at the same age; but he is entirely blind in the left eye, the globe of this eye having atrophied until it is less than two thirds the size of its fellow. The conjunctiva is much reddened and injected. All reflexes are normal and the child's gait is steady.

Dr. Royer added that the case shown by Dr. Carpenter had lumbar puncture performed eight times in the course of the disease, once at the Episcopal Hospital to confirm the diagnosis, and seven times in the Municipal Hospital. It was of considerable interest to note that in this case, in which excessive amounts of fluid had always been withdrawn, McEwen's sign, a tympanitic note over the pterion, was always present and is present to-day: and that, after puncture, this note became less tympanitic. When he came to the Municipal Hospital the cerebro-spinal fluid was cloudy with meningococci, both intra-cellular and cellular, 96 per cent. polymorphonuclears and 4 per cent. lymphocytes, while the blood estimation was 31,600 leucocytes to the cubic millimetre.

Dr. Carpenter said that while McEwen's sign had been most marked on the left side when the case first came under observation, it was most marked now on the right side. All treatment up to the present had been without appreciable result. He thought surgical intervention may become necessary to overcome the contractures.

Congenital Absence of the Fourth Costal Cartilage and Nipple.—Dr. J. K. Walker showed an infant aged 1 year, the first child of healthy parents. Labour was normal. Immediately after birth it was noticed that there was a depression over the anterior portion of the chest on the left side of the sternum. The baby is poorly nourished and anæmic. The right side of the chest is well formed. On the left side is a depression measuring about 1½ by 1½ inches. The fourth costal cartilage is absent, and the third costal cartilage has a common insertion with the second. The left nipple is totally absent. The percussion note is resonant, and there are a few moist râles on both sides posteriorly. The heart can be palpated in the depression; its action is regular and the sounds are clear. The liver is palpable at the costal margin; the spleen is not palpable.

Miliary Tuberculosis in Children.—Dr. C. N. Sturtovant (by invitation) showed specimens from four cases of miliary tuberculosis from St. Christopher's Hospital for Children. The children had been under the care of Drs. Fife, Judson, and Tully during the last eight months. All were little girls, aged 2, 6, 20 months, and 6 years respectively. All showed general involvement at autopsy, lungs, liver, spleen, peritoneum, mesenteric and bronchial glands in each case being studded with tubercles. The two cases which before death had had convulsions on one side of the body showed at autopsy tubercles in the region of the fissure of Sylvius upon the opposite side. Both cases before death were characterised by marked bulging of the fontanelles; this decreased after repeated lumbar punctures, which were also followed by marked relief to the patient, the infants always breathing easier after the excess of cerebro-spinal fluid had been withdrawn. They took nourishment better too, and for a while, at least, muscular twitchings ceased.

Two cases showed tubercles on the pericardium covering the heart, specimens which were thought to be of special interest, because of the comparative rarity of such involvement, and of the large size of one of the tubercles. One other case in interesting, the little girl, aged 6 years. She had had enlarged cervical glands on the left side for three months before admission. She was not sick, but as the enlarged lymph-glands did not diminish her mother requested that they be removed by operation. Immediately after operation the child became very ill, general involvement having evidently been precipitated, ending in death four weeks later.

Dr. J. P. Crozer Griffith said that as far as his experience in autopsies extended miliary tubercles upon the heart were decidedly uncommon; and this was, he believed, the general opinion. He said, too, that in all cases where fluid was suspected in the spinal cord, lumbar puncture was strongly to be advised. It was true that no permanent good could be expected in cases of tubercular meningitis, but that temporary relief might be obtained.

Fatal Vomiting of the Recurrent Type.—Dr. Eleanor C. Jones reported two cases of fatal vomiting. The first occurred in 1903 in a child aged 34 months, with neurotic and rheumatic history. The attack was characterised by nausea, persistent vomiting, great prostration, and constipation. There was some epigastric pain at the beginning, but no abdominal tenderness or distension. The urine did not contain albumin or casts; no examination was made for acetone. The child died of exhaustion on the eighth day of the attack. No autopsy was permitted.

The second case was a boy, aged 3 years, with a neurotic history. The attack at first resembled tubercular meningitis, but meningeal symptoms subsided in three days. Clinical symptoms were the same as in the first case. Post-mortem examination showed the liver larger than normal, with advanced fatty change, the liver cells nearly indistinguishable, and marked round-cell infiltration. No nephritis was present. The blood-vessels of the kidneys were dilated, with a great deposit of pigment in the kidney structure. Thymus and mesenteric glands were enlarged, also the glands about the gall-ducts. These, however, showed nothing abnormal on microscopic examination. The changes in the liver show marked functional incompetency of that organ, which is at least one of the causes of the resulting toxæmia, leading to the general irritation of the nervous system noted in these cases.

Dr. John H. Jopson said that he had once operated on a case of supposed obstruction in an infant, which may have belonged to this type of cases. He had also recently had under his care a boy with a fractured femur, in whom there was a history of attacks of recurrent vomiting. The boy developed an attack soon after the accident. Bicarbonate of soda was used with apparent benefit.

Dr. J. C. Gittings said that the two theories most persistently advocated in the ætiology of cyclic vomiting are (1) neurosis and (2) metabolic disturbance. The neurotic child had come to be almost the rule instead of the exception, so that this explanation is inadequate. In the solution of the problem, therefore, the researches in physiological chemistry which are being carried out so extensively will probably be the determining factors.

Dr. Griffith said that since his published study on the subject of recurrent vomiting a few years ago he had seen a number of additional cases. We are still far from understanding the nature of the disease. The element of nervous influence seems unquestionable in some cases, and in these much may at times be done in the way of prophylaxis, by preventing undue fatigue, exposure, over-excitement from play and the like. But probably in all cases the chief ætiological factor is some fault in metabolism. It is commonly believed that the condition is the result of an acidosis, and on this theory we may expect benefit from the administration of large doses of the alkalies. Yet not all cases are helped by bicarbonate of soda. The title "acetonæemic vomiting" has been given to this largely by French writers. This Dr. Griffith considered unfortunate, as it seems to imply a causal relationship between the acetone and the vomiting; although at first applied in France, the title was not intended to indicate this. Acetonæmia does not produce unretainable vomiting. Like the gastric condition it is only a symptom. In the matter of diagnosis, Dr. Griffith drew particular attention to the difficulty of distinguishing some cases of recurrent vomiting from intestinal obstruction. The two were often extremely similar.

Dr. Jones added that she had had an opportunity in the past week of treating a typical case of recurrent vomiting with large doses of bicarbonate of soda, administered from the beginning of the attack. The urine in this case gave the acetone and diacetic acid reactions. The attack ran its course, and closely resembled the previous ones, which had been treated by other methods.

Foreign Body complicating Tubercular Enteritis.—Dr. J. Claxton Giddings reported this case: a girl, aged 5 years, with tubercular enteritis, in whom the routine X-ray examination of the abdomen for tubercular glands revealed a round foreign body near the anterior superior spine of the right ileum. This was thought to be a possible cause for the severe pain in that region and tenesmus, of which the child had complained. At the operation Dr. H. C. Deaver found a button in the lower ileum, freely movable, which was prevented from escaping by a stricture of large calibre, produced by the partial healing of a tubercular ulcer. The ileum was literally studded with lesions, both recent and old. The operation resulted in almost entire relief from abdominal pain and in a marked reduction in the number of stools, but as was to be expected, had no effect upon the ultimate outcome, death resulting four months later.

Diphtheria in an Infant, aged 2 weeks.—Dr. Royer said that diphtheria in infancy is not very uncommon. In his case the source of contagion was definitely known. The child was a coloured baby, aged 2 weeks, who entered the Municipal Hospital April the 30th, 1905, having become ill the day previous, when only thirteen days old. He had slept with his two-year-old sister, who had been taken ill three days before and came to the hospital with the baby with a severe attack of diphtheria. The mother refused to accompany her baby, so that it had to be weaned on admission. The baby showed moderate prostration, coated tongue, prominent papillæ, serous discharge from both nostrils, and a thick white pseudo-membrane covering tonsils, pillars and post-pharyngeal walls, while the roof of the mouth was considerably injected. Cultures from the throat were positive on three successive days after admission, and negative cultures were secured on the fifteenth and sixteenth days. The child reacted to the antitoxin as typically as do older children, and the disease ran a typical course. Five thousand units were given on admission and this dose was repeated on the day following. By the fourth day, within forty-eight hours after reaching the hospital, the pseudo-membrane had disappeared. Later treatment consisted of throat irrigation with normal salt solution every three hours and five drops of whiskey every two hours for a week. The sister had a more serious infection, and received serum daily for four days, having had 22,500 units. Both children were discharged in good condition seventeen days after admission.

Abstracts from Current Literature.

Medicine.

Multiple sarcomata in a young child (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 128).—**De Ruyter Howland** records the case of a boy, the son of healthy parents, whose right testicle became enlarged at the age of one year. Four months later left hemiplegia developed and enlargement of the right thigh. Subsequently numerous small, raised, hard lumps appeared on the skin. The condition was first diagnosed as inherited syphilis, and treated accordingly. Subsequently the diagnosis of sarcoma was made. Death took place at the age of eighteen months. At the autopsy the meninges were found to be adherent, thickened, and studded with nodules, and there was a small hard growth in the pons. The nature of the tumour in each case was a small round-celled sarcoma. J. D. Rolleston.

Hæmophilia neonatorum (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 120).—**H. F. L. Ziegel.**—A healthy male child had two congenital defects, tongue-tie and phimosis. On the second day of life, as no urine had been passed, the prepuce was retracted, a minute laceration of the glans being caused thereby, and the frenum linguæ was slit. Six hours after the operation oozing from the glans was still present, but was easily checked. Hæmorrhage from the mouth had also developed, and all attempts to control this were unavailing. After death the child was found to have lost 2 lb. There was no hæmophilic family history. J. D. Rolleston.

Perforation of the palate in hereditary syphilis (*'Lyon Médical,' February* 9, 1908, *p.* 307).—**L. M. Bonnet**: A male nursling, aged 1 month, whose parents were both syphilitic, in addition to other signs of heredo-syphilis presented an oval ulceration of the palate. In spite of mercurial treatment the perforation became complete, and the child died three weeks after admission to hospital. Perforation of the palate, though frequent at a late stage of hereditary syphilis, is very rare during the first few months of life. There are only three other cases on record.

J. D. Rolleston.

Blood-pressure in children (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 88).—**W. L. Stowell** made observations with the Riva-Rocci instrument on the blood-pressure of 216 patients whose ages ranged from three to seventeen years, and came to the following conclusions: Vascular tension is lower in childhood than in adult life; its rise and fall are quickly influenced by emotions, as in adults; diseases of the nervous system give high pressure; acute diseases with high temperature may give either high or low pressure;

sclerosis of arteries is almost unknown in childhood, so that the use of a sphygmomanometer for its detection is needless; blood-pressure readings are of interest physiologically, but have little clinical value in childhood.

J. D. Rolleston.

Hysteria in children (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 95).—**G. E. Price.**—Juvenile hysteria is rare before six years and most frequent about puberty. Girls are more frequently affected, but the most severe cases are found in boys. Predisposing causes are heredity, especially parental alcoholism, faulty environment and education, and conditions lowering the vitality or causing continuous irritation of the nerve centres. The symptoms are essentially the same as in the adult. The prognosis is much more favourable in children than in adults. After giving an outline of the treatment Price records four of the less common forms of juvenile hysteria in children from ten to fifteen years: (1) Hysterical tremor associated with presence of degenerative stigmata in a girl, aged 10 years; (2) Hysterical joint in a boy, aged 13 years; (3) a psychic type in a girl, aged 13 years, whose father was an alcoholic: (4) hysterical dyspnœa in a girl, aged 15 years.

J. D. Rolleston.

Pneumo-hydrothorax in a boy, aged 2 years (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 21).—**F. Huber.**—A boy, aged 2 years, was admitted to hospital with a history of fever, cough, and vomiting of a fortnight's duration. Signs of pneumo-hydrothorax were present in the left chest. Within a week of admission improvement occurred without puncture of the chest. Repeated examination of the sputum was made with negative results. A skiagram taken in convalescence showed a slight shadow over the left base due to thickening and adhesions and enlarged glands to the right of the heart.

J. D. Rolleston.

Breath-sounds over pleural effusions in children (*'Pediatrics,' February*, 1908, *p.* 92).—**J. R. Clemens** explains the presence of breath-sounds over pleural effusions in children by the fact that in a small child the chest wall yields and allows not only the fluid to accommodate itself but also full inflation to the lung beneath. In the adult the chest wall is unyielding, and the fluid is accommodated at the expense of the lung, which is compressed and retracted. After a certain limit the mechanism in the child is the same as in the adult, and the lung becomes retracted, so that in long-standing and extensive empyemata in children there is the same absence of breath-sounds as in the adult.

J. D. Rolleston.

Rest treatment in chorea (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 101).—**J. Ruhräh** thinks that a modified Weir-Mitchell treatment gives quicker, better, and more lasting results than any other method. Every case should be kept in bed until the movements have ceased entirely, and the patient has gained in weight. In the average case no medicine is required. Iron is indicated if there is anæmia. Ruhräh did not use arsenic. With one or two exceptions all the cases so treated improved rapidly. In the mild cases the movements ceased in two or three days, in the moderate in a week or ten days, and in the severer in from two to three weeks. The shortest stay in hospital was ten days, the longest seventy-two, and the average thirty-five days. Recurrences under this treatment were exceptional.

J. D. Rolleston.

Diphtheria in Belgium (*'Centralbl. für Laryngol.,' March*, 1908, *p.* 121).—**Champon.**—In the ten years previous to the employment of antitoxin (1886 to 1895) 230 children were treated for diphtheria in the municipal hospital at Ghent. The mortality was 56 per cent. Since 1895 there had been 648 cases with a mortality of 25 per cent. In private practice the results of antitoxin treatment have been much better because the children are frequently brought to hospital too late. The most brilliant results have been achieved in operations for laryngeal diphtheria. In the pre-antitoxin era of 151 such cases only 32, or 19 per cent., recovered, whereas out of 300 cases treated with antitoxin, 180 cases, or 60 per cent., recovered. Antitoxin if given early prevented the occurrence of paralysis, but was useless when the paralysis was already present.
J. D. Rolleston.

Vincent's angina (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 127).—**J. E. Hunt** records a case in a coloured boy, aged 5 years. Both tonsils were covered with greasy, friable, dirty brown membrane, with a small deep ulcer on the right side. There was much salivation and profuse watery nasal discharge. The glands at the angle of the jaw were enlarged. Temperature 103·5° F., pulse 120. A smear showed a practically pure infection by Vincent's organisms. Potassium chlorate and aconite were given internally, but no local applications. Rapid and complete recovery took place. Hunt thinks it probable that the nose was involved, owing to the occurrence of epistaxis and nasal discharge. J. D. Rolleston.

Cyclic vomiting with hepatic insufficiency (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 104).—**E. W. Saunders** records a case in a boy, aged 2 years, who since the age of ten months had had several attacks of vomiting and abdominal pain. Great depression, excessive thirst, slight pyrexia, irritability and insomnia were present during the attacks. The condition of the child suggested several possibilities: gastro-enteritis, intestinal obstruction, arsenical poisoning, dilatation of the colon or tuberculosis. Examination of the urine showed acetone and diacetic acid. In one attack the breath had the odour of acetone. The stools were clay-coloured, but the absence of jaundice and of bile in the urine showed that there was a condition of acholia, and not a displacement of bile. Two grains of sodium glycocholate and a quarter of a grain of zinc sulphocarbolate were therefore administered, and rapid improvement occurred. J. D. Rolleston.

Acetonæmia (*'Dublin Journ. Med. Sci.,' February*, 1908, *p.* 86).—**H. B. Leech.**—A boy, aged 3 years, was admitted to hospital as a probable case of meningitis. The illness had started a few days previously with pains in the head extending down the back, and vomiting. On admission he was listless and apathetic. He lay on his back with his legs drawn up in a frog-like position, and resented any attempt to straighten them. There was slight head retraction. The bowels were constipated. The urine contained diacetic acid and acetone; no sugar. A drachm of sodium bicarbonate was administered every four hours for three weeks, at the end of which time great improvement had taken place, and the acetone had entirely disappeared from the urine. J. D. Rolleston.

Subcutaneous emphysema following exploration of the chest (*'Arch of Pediat.,' January*, 1908, *p.* 20).—**J. C. Gittings** reports three cases in which pleural puncture was followed by subcutaneous emphysema, and in one case by pneumothorax as well. The emphysema lasted from five to eight days. All recovered, but pronounced shock and frothy hæmoptysis occurred in one case. Gittings alludes to the editorial in The British Journal of Children's Diseases, 1905, p. 466, in which there were collected thirteen fatal cases following exploratory puncture. The proximity of the consolidated lung to the chest-wall to which it is bound by adhesions is probably the cause of the condition. J. D. Rolleston.

Hæmothorax in an infant (*'Arch. of Pediat.,' January*, 1908, *p.* 10).—**W. P. Northrup.**—Aspiration was performed on a child, aged 5 months, presenting signs of fluid in the left chest and urgent dyspnœa. Two ounces of dark blood were withdrawn, and recovery took place. The cause of the hæmothorax was obscure. There was no history of accident, no evidence of tuberculosis, no hæmorrhagic condition, no malignant growth, no syphilis, no evidence of thrombosis nor heart disease. Nine months after the aspiration the child had pneumonia followed by normal convalescence. Three months later the child was quite well, but occasionally its respiration was rapid. J. D. Rolleston.

The influence of vaccination on infectious diseases (*'Jahrb. f. Kinderheilk.,'* Bd. 64, *p.* 336, 1906).—**Jezierski.**– Owing to a case of smallpox occurring at the isolation hospital at Zürich, thirty-eight convalescents were vaccinated. Twenty-two had scarlet fever, ten tuberculosis, five typhoid fever, and one leprosy. The course of the last three diseases was not influenced by vaccination. *B. lepræ* was found in the vaccinal pustules in the case of leprosy, but the specific micro-organisms were not found in the cases of typhoid and tubercle. Eleven of the scarlet fever patients who had hitherto not been vaccinated suffered to a greater or less degree after inoculation. The first had a fresh attack of rheumatism and endocarditis, the second a fatal relapse, the third a recrudescence of nephritis, in the fourth the desquamation was delayed; in the fifth varicella was concurrent with vaccinia, and in the remaining cases severe local reaction or constitutional disturbance occurred. Of the eleven scarlet fever patients whose illness was not affected at all by vaccination six had been vaccinated previously. J. D. Rolleston.

Typhoid fever by direct contagion in children's hospitals (*'Bull. et Mém. de la Soc. Méd. des Hôp. de Paris,' p.* 1083, 1906).—**A. Netter.**—A girl incubating typhoid fever was admitted to the scarlet fever block at the Hôpital Trousseau. Thirteen cases of typhoid occurred in this block in the next few months. Of the ninety-one patients in the block, fifty were girls and forty were boys. The girls alone were affected. Among the latter forty suffered from vulvo-vaginitis, and from this group only the cases of typhoid were derived. The patients suffering from vaginitis required constant attention, and the contagion was probably spread by the nurse using the same towel to wash several children. In support of this view are the following facts: (1) The child who was incubating typhoid had vulvitis on admission. (2) Typhoid bacilli were isolated from the vulvar pus. Whether the bacilli gained entrance by the vulva or alimentary canal is uncertain, and is of secondary importance. Netter arrives at the following conclusions: Under ordinary circumstances house infection in typhoid is exceptional. Bugs, fleas, and dust play only a secondary part. If these factors had been more important some of the boys and the girls without vaginitis would doubtless have been affected. (2) Direct conveyance of the contagion by the hands or soiled objects is what is most to be avoided. (3) It is unnecessary to reserve special hospitals or even special wards for typhoid fever. (4) The crowding in the Paris hospitals tends to make direct contagion more likely than in London hospitals (*cf.* British Journal of Children's Diseases, 1906, p. 460). J. D. Rolleston.

Infantile scurvy ('*Mont. Med. Journ.*,' *February*, 1908).—**Hamilton** reports two cases, the first of which was fatal. The first symptoms of spongy gums appeared when the first teeth were cut at the age of eight months, but two months passed before the other symptoms of general tenderness, hæmorrhages under the skin and with the urine, were noticed. At this period the blood showed—red blood cells 1,380,000, leucocytes 15,600, and hæmoglobin 16 per cent. The child died at 11 months old, and the autopsy showed the characteristic hæmorrhages under the periosteum of the orbit, femur, tibia, and ribs. The second case was in a child which had been fed chiefly on Eskay's albuminous food. When nine months old the legs became sore, and a month later the right eyelid became suddenly swollen and the eye was displaced forwards and downwards. There was some purpura but no hæmorrhages under the gums. The red blood cells were diminished to half and the hæmoglobin to 26 per cent. Under a suitable diet the infant rapidly improved. The writer discussed the importance of the recognition of hæmaturia as an early sign in the disease. The X rays show, as described by Fraenkel, a characteristic shadow in the most recent zone of the diaphysis: this is broader in the middle of the zone and diminishes laterally.

J. Porter Parkinson.

Snake-bite; recovery ('*S. A. Med. Record*,' *February*, 1908).—**Brown** records the case of a boy, aged 16 years, who was bitten by a puff-adder measuring 3 feet 9 inches. Two ligatures were immediately put tightly above and below the bitten knee. He was seen by Dr. Brown four hours after the accident when he was collapsed and apparently *in extremis*: one tenth of a grain of strychnine was immediately given with brandy and hot stupes over the heart. Five large incisions were made over the bite and packed with crystals of permanganate of potash and an Esmarch's bandage placed round the middle of the thigh; this was loosened an hour later and caused great pain and collapse and further brandy and strychnine were given. This had to be repeated till in all half a bottle of brandy and half a grain of strychnine were administered. The leg became enormously swollen and huge bullæ appeared all over it. Two days later slight temporary fever appeared with rigors and the usual symptoms of sapræmia. Recovery was eventually complete. It is very unusual to see a report of recovery from the bite of a large deadly snake, especially when it has not been treated immediately. J. Porter Parkinson.

Treatment of ringworm of the scalp by the X rays ('*Med. Brief*,' *March*, 1908).—**Sale Barker** points out that the action of the X rays is to cause atrophy of the hair papillæ, and it is of the utmost importance that the dosage of the rays should be just sufficient to do this and no more, otherwise there may follow an acute dermatitis perhaps leading to permanent baldness. This accurate dosage was impossible till the invention of the "radio-chrometer" by Sabouraud. A fortnight after the treatment the hair begins to fall from the area treated, and in another fortnight the part is devoid of hair and free from ringworm. Six weeks later the growth of new hairs is usually visible. The chief points in favour of this treatment are: its rapidity, as a single exposure is usually sufficient, and the average time of stay of each child in the ringworm schools has been reduced from twenty months to just over five months. Also, the treatment is painless and the cure is complete, as the writer has never heard of a case of recurrence. J. Porter Parkinson.

A case simulating cerebro-spinal meningitis ('*l'Echo Med.,*' *March*, 1908).—**Delearde** recounts the case of a boy, aged 14 years, admitted under his care for intense headache and delirium with vomiting, of one day's duration. He was drowsy and had herpes on the lips, he lay curled up, and the abdomen was retracted. There was severe pain at the back of the neck, and Koenig's sign was present. The heart and lungs were normal, and so were the fundi of the eyes. The temperature was about 100° F. and the pulse 92 to the minute. By lumbar puncture 30 c.c. of a turbid puriform fluid was withdrawn; it contained polynuclear and mononuclear cells, but no microbes could be demonstrated. Five c.c. of a solution of electrargol was injected into the spinal thecæ. The next day he seemed better and the temperature fell to normal, but there was some rigidity of the muscles of the neck and back. The symptoms gradually disappeared and in a week the child was convalescent. A similar case was published by Widal, and in this the blood reactions of the typhoid and paratyphoid organisms were absent, and no organisms could be found on cultivation or on injection into animals. He compares the aseptic purulent fluid to that which is found in cases of renal pericarditis, and to some cases of purulent peritonitis where no organisms are found. The prognosis is good and the diagnosis is made by the absence of micro-organisms.

J. Porter Parkinson.

The treatment of scarlet fever ('*La Trib. Med.,*' *December*, 1907).—**A.** and **M. Claret.**—Some authors use the serum of animals rendered immune against the streptococcus, as these organisms are almost constantly present in the discharges of scarlet fever patients. Moser's serum is now abandoned. Kampe's serum is prepared from the epidermal scales of patients and immunised animals with the products, and found that the serum of these animals had both preventative and curative action: this treatment is now abandoned. The authors recommend the following treatment: The skin should be anointed every other day alternately with warm baths, the nose should be asepticised with glycerine of borax, and the mouth and throat irrigated with boric acid lotion three times daily, and in the intervals painted with 5 per cent. solution of salicylic acid. Intestinal asepsis should be assured. The diet should be milk during the first four or five days, and afterwards eggs and meat may be given without addition of salt till the end of the third week. A mother suffering from scarlet fever should continue to nurse her child, as the danger of artificial feeding is greater than the remote possibility of infecting the child. A mother who has not had scarlet fever should not nurse her child if it is suffering from the disease. J. Porter Parkinson.

Myxœdema ('*Med. Press,*' *March* 18, 1908).—At the Gesellschaft, Vienna, **Moszkowicz** showed a child, aged 6 years, who had suffered from myxœdema when an infant through thyreoaplasia. When the child was three months old he inserted into the tibia a piece of thyroid gland, 3 or 4 c.cm. in size, which had been removed from a patient who had been operated upon for goitre. The improvement in the child's condition was rapid, and has since continued. His reason for selecting the medullary substance of the tibia was the frequency of metastasis in that situation in adenomatous carcinoma resembling thyroid, and he surmised that it had some affinity to the gland. **Payr** also supported the view that the circulation in the marrow of the bone was more favourable to this operation than the spleen. **Eiselsberg** said that he had selected a position between the fascia and the peritoneum, following the example of experiments in animals, which always do well. He thought, however, that the tibia was a much better place for implantation than the spleen, no matter how much might be urged theoretically in favour of the latter, but considered that the reason given by Moszkowicz was not a rational one. **Biedl** was also in favour of the transplantation method advocated, because he found in his experiments on animals that the transplanted sections were better nourished, owing to the better blood-supply and firmer support than they had in the spleen or peritoneum. It is certainly better than sub-fascial implantation, and more vascular. T. R. Whipham.

Acute hæmorrhagic nephritis after mumps in an infant (*'Arch f. Kinderheilk.,' vol. xlvii*).—**Jelski** reports the case of an infant, aged 7 months, who, two weeks after the onset of a moderately severe attack of mumps, passed a few specks of blood into the diaper. Examination of the urine revealed the existence of an acute hæmorrhagic nephritis. In spite of treatment the child died, apparently from uræmia. Three other children in the family had mumps at the same time, but presented no complications. The author finds that acute nephritis has been reported as following mumps in older children, but in infancy it is unusual. T. R. Whipham.

Hæmangiectatic hypertrophies of the foot and lower extremity (*'Med. Press,' March* 4, 1908).—**Parkes Weber** draws attention to a group of rare cases seen in children, in which hypertrophy of one limb is found to be associated with tumour-like overgrowth in the corresponding portion of the vascular system. The hypertrophy, which affects the soft tissues, and usually the bones as well, seems to depend on the increased vascularity of the parts. The condition is congenital, or at all events it is noticed soon after birth, though it may be "developmental," and becomes more marked as the child grows. The vascular overgrowth may take the form of a diffuse cutaneous capillary nævus, or there may be cavernous angiomata; more rarely there is found a lymphangiomatous growth of the skin, which is sometimes dark red in colour from hæmorrhage into the superficial lymph-vesicles. Occasionally the main arteries are enlarged and one or more veins dilated. From trophic œdema of the extremities, which tends to run in families, the condition may be distinguished by (1) the associated vascular abnormalities, and (2) an actual increase in the length of the bones, and from real gigantism by the hypertrophy being not nearly so great as in giant fingers, toes, etc.; in the latter also the vascular development is not disproportionately excessive. Confusion with elephantiasis is hardly possible. T. R. Whipham.

Leucocytosis in diphtheria (*'Journ. of Path.,' January*, 1908).—**Dean** describes some important investigations which he has made on the leucocytosis of diphtheria and the modifications found in the blood after the injection of antitoxin. His observations were made both on clinical cases of patients suffering from diphtheria and also on experiments with rabbits. He finds that after the experimental injection of diphtheria toxin there is a great increase in the total number of leucocytes, which is due to the appearance of an enormous number of polymorphonuclear cells. At the same time degenerative changes can be seen in both the white and the red cells, the latter showing marked polychromatophilia. The eosinophile cells, as a rule, completely disappear, and no myelocytes are seen. These changes are similar to those observed in cases of diphtheria in human beings. A dose of antitoxin, which, when given simultaneously with the toxin, completely protects the animal experimented upon, prevents the appearance of a leucocytosis; and similarly, when a sufficient dose of antitoxin is given shortly after the injection of the toxin, the number of leucocytes rapidly falls to normal. When a considerable interval is allowed to elapse between the injections of the toxin and the antitoxin, no reduction in the number of leucocytes occurs. In two clinical cases the interval between the onset of the disease and the injection of antitoxin was comparatively short, and a considerable reduction in the leucocytes appeared to follow the use of antitoxin. In four other cases, however, in which a relatively longer time had elapsed before antitoxin could be employed, no diminution in the number of the white cells took place. The author therefore concludes that a marked reduction in the leucocytosis occurring within the first twenty-four hours after the injection of antitoxin probably indicates a good prognosis. He also finds that a sufficient dose of antitoxin completely protects the corpuscles from degenerative change. T. R. WHIPHAM.

On breast-feeding (‘*Deutsche Aertze Zeitung*,’ *December* 15, 1907).—**Ziegenspeck** concludes a series of articles on this subject with an account of the investigations made by Röse on the relationship between suckling and dentition. The statistics deal with 157,361 school children. It was shown (1) that there is an intimate connection between non-breast-feeding and dental disorders; (2) there is a progressive diminution in such disorders the longer the child is suckled; (3) the longer suckling was continued the fewer were the rachitic troubles and deformities in the enamel; (4) the physical development likewise rose (height; chest-girth and weight); (5) out of 6744 recruits who had not been suckled, one third were rejected for military service. According to Röse the large town is the grave of the people. To encourage nursing, payments must be made to the mother. Money is the best galactogogue. M. D. EDER.

Blennorrhœa in the new-born (‘*Prager med. Wochens.*,’ *January* 2, 1908).—**Eischnig** states that it is now fully proved that all these cases are not due to the gonococcus. Authors' estimates vary from 35 per cent. to 73 per cent.; out of forty-one cases examined in Vienna, twenty-one were gonorrhœal, and twenty, *i. e.* 45 per cent., non-gonorrhœal. Gonorrhœal infection always begins within three days of life, though errors are readily made. Of the twenty other cases there were five of streptococcic infection; one due to *B. pyocyaneus*; six were due to *Staphylococcus albus*, *aureus* or *citreus*; one to *B. pneumococcus*. In three cases there were large numbers of *B. xerosis*, which in those cases was pathological. No microbes were found in five cases; the discharge appeared from seven to nine days after birth. In one of these cases the eyes had been treated with permanganate solution for three days before the discharge appeared; in another fifteen days later *Staphylococcus albus* was found. It is not justifiable to conclude that the disease is gonorrhœal when the bacteriological examination is negative. Despite all the new silver preparations, Crede's method is still the best prophylactic measure. The treatment should be carried out without a bacteriological examination. If gonorrhœal the physician is not doing his duty if he does not ensure that the mother (and father) are adequately treated. In congenital syphilis there is a slight conjunctivitis with a relatively large secretion which is difficult to control. This, of course, requires specific treatment. M. D. Eder.

Vital statistics of Stuttgart for 1906 (*'Medizinisch Statisticher Jahresbericht über die Stadt Stuttgart im Jahr.,'* 1906).—From **Dr. Weinberg's** report we extract some statistics about the children. Births: There were 7381 births, of whom 248 (143 and 105 girls) were stillborn. The proportion of illegitimate birth was 13·9 per cent. Deaths: 1326 under one year, 1100 legitimate and 226 illegitimate; 48·6 per cent. of the deaths were due to gastro-intestinal diseases, second to fifth year: 369 deaths (8·8 per cent. of total deaths) of which 25·5 per cent. were due to diseases of respiratory system: sixth to fifteenth year, 128 persons, 3 per cent. of total mortality; 32·8 per cent. of the deaths were due to tuberculosis.

M. D. Eder.

The digestive glands in the child (*'La Semana Medica,' December* 17, 1907).—**Lesage,** in an elaborate account of the work done in this direction, draws attention to the work of Fischer, Moro and others on the absorption of milk. The mother's milk is digested with such ease not only on account of its katabolism into dipeptides and acid amines but also to the reconstruction these undergo into the readily absorbable polipeptides. During the digestion of cow's milk there is notable leucocytosis, which is almost absent in a nursing child. In the first case the digestive glands are insufficient and thus the leucocytes give their help. There is no essential difference in the casein of the two milks. The principal cause of the difficulty in digesting cow's milk is the difference in the ferments and salts.

M. D. Eder.

The allergic reaction as an aid to the diagnosis of tuberculosis in children (*'Prag. Medizin. Wochenschrift,' January* 23, 1908).—**Schleissner** reports on the value of Pirquet's method after employing the cutaneous tubercle vaccine on 222 children up to the age of fourteen. All the injections were made at the bend of the forearm. There were no ill or unpleasant after-effects. In clinical cases no rise of temperature occurred, nor with feverish patients was there any alteration. The vaccination is almost painless and the course of the reaction is equally so. Logically the cases group themselves into (1) the non-tuberculous, (2) the tuberculous, (3) the uncertain. But of the first group none can speak positively without the result of an autopsy; a negative reaction means much less than a positive one: from the latter one is justified in saying the patient is tuberculous. But of 222 cases of varying ages 96 gave a positive reaction; in a few cases where tubercle bacillus had been found or surgical measures showed the nature of the disease there was no positive reaction. The method has many advantages over that of injecting tuberculin. One of the great drawbacks is that it simply shows that somewhere in the body there is some tuberculous infection but nothing as to the seat, the degree or the nature of the illness. In spite of its apparent utility one cannot yet say absolutely that Pirquet's reaction denotes a forward step in practice. M. D. Eder.

Differential diagnosis of stenoses of the upper air-passages in children (*'Allgemeine Wiener medizin. Zeitung,' January* 7, 14, 21, and 28, 1908).—**Galatti,** in a sketch of this subject, remarks that these stenoses are most frequent in pediatry; some forms, for instance those arising from foreign bodies, scarcely ever occur among adults. The first point is whether the symptoms are due to external pressure. Then the question as to the presence of a foreign body, stings, etc., is dealt with. After reviewing the diagnosis between pseudo-croup, spasmodic laryngitis, catarrhal laryngitis, diphtheria, some rarer forms are considered: Neuropathic œdematous laryngitis, laryngitis in varicella, aphthous laryngitis, angio-neurotic œdema of larynx, which comes as suddenly and mysteriously as it goes. Characteristic of this list is the concurrent œdema of the skin. A little-known form of laryngitis is that which occurs in malaria. Some chronic forms of laryngitis also receive notice, these due to new growths, tubercle syphilis, etc. M. D. Eder.

On mineral metabolism in artificially reared infants (*'Monatschr. f. Kinderheilk.,' February*, 1908).—**Bruck's** experiments on this question lead him on the whole to an agreement with the work carried out by Blauberg. He finds that alkalies can be almost completely re-absorbed; sodium salts seem especially retained. The early alkalies are markedly rejected in the stools, invariably more than in the urine. M. D. Eder.

The protection of child-life in Lisbon (*'A Medecina Contemporanea,' January* 26, 1908).—The medical journal reprints with some comments the substance of some articles that have appeared in the 'Seculo,' which has started a campaign for the protection of child-life. The heavy mortality is attributed to the low wages of the working classes, the high price of provisions and the want of sufficient hospitals, etc., for children. According to the statistics presented the earnings of a wage-labourer are half those of the same class in Paris. Whilst in Paris meat costs but a trifle more, bread is much cheaper, and sugar about one third its cost in Lisbon. According to the 'Seculo,' if the children are to be saved from death and disease the State must undertake the free feeding of the school-children. This, our contemporary remarks, is the remedy that will be found necessary to overcome the similar problem in London. M. D. Eder.

Two cases of acute primary neuritis (*'La Medecina de los Ninos,' October*, 1907).—**Tuixans** relates two cases in children where the neuritis was the sequence of a chill about a week previous. In both cases there was severe pain along the nerve and the skin was reddened. Some twenty-five days later there were trophic disturbances and difficulty in movements. Sensibility was normal except for some slight formication in the soles. The trophic disturbances caused a rapid atrophy of the muscles of the left leg in one case, of the right leg in the other. There were severe pains in the knee of a dull nature without exacerbations. The one case gave rise to a suspicion of polyneuritis, but the diagnosis of the other was quite certain. The treatment recommended is galvanism, commencing with a very weak current and carrying it on for a prolonged period. M. D. Eder.

Infantile mortality in New Zealand (‘*The Australian Medical Gazette,*’ *September* 20, 1907).—A deputation of medical men in Wellington, New Zealand, waited on the Government urging that some steps be taken to protect infant life more fully. The Attorney-General a few days later declared they were confronted with a declining birth-rate. The mortality of infants was not declining, averaging about 77 per 1000, while the general death-rate had been steadily declining, and likewise that of children legitimately born. Licensed houses for infants should be under the supervision of trained nurses. The State should pay what was necessary for the child's maintenance, while doing its best to make the parents pay.

M. D. Eder.

Pathology.

Congenital absence of the tibia (‘*A Medicina Contemporanea,*’ *January* 19, 1908).—**Salazar de Sousa** showed an infant, aged 4 weeks, without a right tibia, absence of the bone being proved by palpation and by the Röntgen rays. There was the possibility of inherited syphilis since the mother had had two miscarriages; there were no specific lesions. The leg was flexed and rotated so that the internal aspect was anterior; there was pes varus. Complete extension was impossible, the limit being to angle of 140°. He did not propose any operation at the present but to bring the limbs into as good a position as possible by splints and massage.

M. D. Eder.

A case of achondroplasia (‘*The Austral. Med. Gaz.,*’ *December* 20, 1907).—**Litchfield** prints with photographs a case of a boy, aged 23 months. He was delivered by Cæsarean suture; the mother was an achondroplasic dwarf. The boy's intelligence is normal; there is some evidence of superimposed rickets.

M. D. Eder.

Danger of the ophthalmo-reaction for the diagnosis of tubercle (‘*Lancet,*’ *March* 7, 1908).—**Maitland Ramsay** reports the case of a girl, aged 12 years, who was suffering from superficial vascular ulceration of the right cornea. A drop of 1 per cent. solution of tuberculin was instilled into the left eye, which was quite free from inflammation. Within twenty-four hours there was violent muco-purulent reaction, the discharge being very abundant and accompanied by marked swelling of the lids and thickening of the palpebral conjunctiva. The inflammation progressed in spite of treatment, till the cornea quickly became vascular and abraded over the central area. Injections of Koch's old tuberculin were given which led to an improvement in the condition of the right eye. The left one, however, remained unchanged. After a time the discharge abated, but there now remains considerable opacity of the centre of the cornea, and in consequence the vision is seriously impaired.

James Burnet.

Therapeutics.

Serum treatment of cerebro-spinal meningitis (‘*Journ. of Exper. Med.,*’ *vol. x, No.* 9).—**Flexner** and **Jobling.**—The investigations made by these observers on the meningococcus and on an immune serum prepared from monkeys have already been reported in the medical press. Of forty-seven cases treated with this serum 79·9 per cent. died and 20·1 per cent. recovered. All the cases were not treated at the same period of the disease, so that conclusions as to the value of the serum cannot be drawn from these figures. Eighteen patients, however, were treated during apparently the first three days of the disease, and of these 88·9 per cent. recovered, leaving a death-rate of only 11·1 per cent., which seems to indicate that the serum has a beneficial effect. Flexner allows that at present the method of treatment is merely empiric, and a more extensive use of the serum is needed before its full value can be estimated. The results so far seem to show that when used in the earliest stages, and in cases in which the functional activity of the body is not depressed, the serum allows of a better prognosis. Experiments seem to point to the serum being bactericidal rather than antitoxic in its effects. [In this connection it is interesting to note the results obtained with Flexner's serum in the Belfast epidemic. Since September, 1906, over 70 cases have been treated. In the first 50 which have been treated to a conclusion 37 recovered and 13 died, giving a mortality of 26 per cent. Before this serum came into use the death-rate in 275 cases was 72 per cent. It is stated that the improvement in the death-rate cannot be attributed to a diminution in the virulence of the disease.—T. R. W.] T. R. Whipham.

On the internal use of salt-solutions in acute diet disorders among sucklings (*'Monatschr. f. Kinderheilk.,' February*, 1908).—**Heim** and **Iohn** remark that all these diseases, though so diverse in appearance, have one common factor, the rapid fall in weight. Though related with some alteration in metabolism, the extremely rapid wasting, which can amount to 100 grammes daily, is due to loss of water. Recognising the difficulties of continuous subcutaneous infusions (especially in private practice), although still essential to tide over an emergency, say in cardiac failure, they recommend the following simple procedure. The infant is deprived of all food for twenty-four hours during which time it is given *by the mouth* about 1 litre (?) of a solution containing 5 grammes of sodium chloride and 5 grammes of sodium bicarbonate to 1000 grammes of distilled water. In the large majority of cases there will be an increase in weight amounting from 100 to 600 grammes. Fifty-nine infants suffering from diet disorders of all degrees of severity were treated on this plan; 2 died, in 3 treatment was not permitted; 54 recovered. The authors relinquish the use of castor oil, syr. mannati in all severe cases which they treated. As a result of their observations and comparisons they are convinced that by these salt solutions the period of convalescence is much shortened. M. D. Eder.

Otology, Laryngology and Rhinology.

Two cases of papillomata of the larynx in little children treated by Killian's direct method (*'La Presse Oto-laryngologique Belge,' August*, 1907).—**Van den Wildenberg**, of Antwerp.—One child, aged 17 months, had two papillomata, causing aphonia and progressive difficulty of breathing. The second patient, aged 18 months, had been aphonic for a year, and had had several dangerous suffocative attacks. There was also dyspnœa and bronchitis. The larynx was full of papillomata, which were ablated at several sittings, tracheotomy being necessary at the first manipulations. The difficulties of this method is such young children are due to the small size of the larynx, and the shortness and softness of the epiglottis. Cocaine and adrenalin are not very safe for infants, and the author prefers to operate without their aid, under light general anæsthesia.

MACLEOD YEARSLEY.

Pignet's numerical index in adenoid subjects (‘*Gaz. des Hôpitaux,*’ *January* 22, 1908).—**Gaullieur l'Hardy** has adopted this index as a test for the robustness of the adenoid subject. It is arrived at by subtracting the sum of the major perithoracic circumference and the weight from the height. The following table gives the results of its application in ordinary individuals:

Numerical index	below	10	=	very vigorous	constitution.
,, ,,	from	11 to 15	=	,,	,,
,, ,,	,,	16 ,, 20	=	good	,,
,, ,,	,,	21 ,, 25	=	pretty good	,,
,, ,,	,,	26 ,, 30	=	feeble	,,
,, ,,	,,	31 ,, 35	=	very feeble	,,
,, ,,	above	35	=	weakly	,,

Nodestini has applied this test to adenoid cases, with the following results:

In	7·7	per cent. of cases	the index varied	between 16 and 20,	constitution	good.
,,	46·0	,, ,,	,, ,,	21 ,, 25	,,	pretty good.
,,	30·76	,, ,,	,, ,,	26 ,, 30	,,	feeble.
,,	15·39	,, ,,	,, ,,	31 ,, 35	,,	very feeble.

The writer noted from these observations that the index varied directly in proportion with the adenoids and the results occurring therefrom; thus where there was a high index the growths were plentiful, with pronounced aural, respiratory and circulatory troubles, whilst the reverse obtained with a low index. Another observation by Modestini was that, contrary to that which obtains in a well-developed body, the measurement between the finger-tips with arms horizontally outstretched exceeded that of the height in adenoid subjects. This he ascribes to the fact that the transverse diameter of the throat is increased in such individuals.

MACLEOD YEARSLEY.

Diseases of the naso-pharynx in infancy (‘*Boston Med. and Surg. Journ.,*’ *April* 18, 1907).—**Morse** reminds us that adenoids are almost always present in babies with frequent colds in the head. They are often overlooked and the treatment of the condition is most unsatisfactory unless the underlying cause is recognised. Adenoids once removed, “colds” and “snuffles” cease at once. Such cases often yield to local astringent treatment without operation. Morse recommends the following: Iodine gr. $\frac{1}{4}$–$\frac{1}{2}$, camphor gr. j, menthol gr. j. benzoinol ℥j. Five to ten drops put into the nose with a dropper every three or four hours.

MACLEOD YEARSLEY.

Surgery.

The treatment of tuberculous arthritis (‘*Canadian Journ. of Med. and Surg.,*’ *January*, 1907).—**A. Primrose.**—After discussing operative treatment, the author describes the Home for Sick Children in Toronto, where there are extensive open-air verandahs, where the patients can live entirely in the open air, and he shows the extreme value of such methods. He considers Bier's treatment of producing hyperæmia by bandaging of great value in many cases. When in spite of efficient treatment the conditions are becoming progressively worse, operation may be undertaken with advantage. Abscess may develop at any stage, even before the cavity of the joint has become invaded by disease, and this may convert a purely tuberculous arthritis into a mixed infection. It is in these cases that the most disastrous results are seen; destructive processes rapidly follow and may endanger the life of the patient. Tuberculous abscesses may disappear spontaneously and affect in no way the course of the disease, but if they approach the skin or mucous membrane operation is indicated; it must be opened, curetted, rubbed out with iodoform gauze and stitched up without drainage; in the hands of the author this method has been attended with excellent results. He considers the use of a drainage-tube totally unjustifiable. Where the disease continues to make progress, or in septic cases, resection, or even amputation, may be necessary. In the child arthrectomy is preferable to complete excision to preserve the epiphysial cartilage and not interfere with growth, but in the adult complete excision to produce bony ankylosis is preferable. In definitely localised areas of disease it may be possible to remove these without opening the joint, especially in the case of the knee. The results aimed at vary with the joint: at the elbow one wishes mobility, but at the knee stability and firm bony ankylosis. In the case of the ankle-joint excision of the astragalus by Kocher's method is the most satisfactory operation, as giving a much more satisfactory result than excision.

J. Porter Parkinson.

The unbalanced foot ('*Canadian Journ. of Med. and Surg.*,' *March*, 1908).—**M'Kenzie** considers this is the most common cause of lameness. He says that there is a tendency for the unsupported foot to roll inwards, bringing the internal malleolus and the inner border of the foot nearer to the ground than when the weight is borne normally upon both feet. This, when present in abnormal degree, is one of the most important elements in the weak or flat foot. Balance is maintained normally by a group of muscles passing behind the inner malleolus and in front of it to the inner border and the under surface of the foot. This points out an indication for the treatment of flat foot, the strengthening of these muscles. Sometimes, though rarely, rolling of the foot outwards occurs. Talipes equinus and calcaneus are likewise produced by weakness in certain groups of muscles. The indication in all these cases is to restore balance; in the slighter cases this may be done by properly prepared boots or braces. In young persons education and development of the muscles is an important factor in the treatment. The transposition of tendons is fairly satisfactory in its results, and excision of a joint where indicated may be a satisfactory method of treatment. Osteotomy is frequently necessary. In all cases it is the great essential to place and maintain the foot evenly and directly under the body weight.

J. Porter Parkinson.

Scoliosis treated by crawling ('*Prager med. Wochens.*,' *December* 26, 1907).—**Kuh's** demonstration of this treatment, introduced by Klapp, is reproduced with two figures. In young children there is no difficulty about crawling movements; modifications are required in older children, whose spinal columns commence to be rigid, in order to induce active movements of the back-bone. The following are the three methods adopted: The children move rapidly forwards. The head is inclined towards the side when hand and knee meet, whilst the child is directed to look backwards. In the second method the movements are made very slowly, but they are forced.

The hinder leg is placed on the concave side, whilst head and shoulder pressed to the concave side. The third method consists in a forced unbending of the region and spot. The bow of the back-bone is strained, the bow of the ribs pressed in and the flat arched out considerably. The aim is more especially to strengthen the rib muscles. The results have been good in milder cases; scoliosis in small anæmic children is a contra-indication to this treatment. In severe scoliosis more harm than good is done.

M. D. Eder.

Examination of excised tonsils (*'Arch. of Pediat.,' January*, 1908, *p.* 31).—**A. F. Hess** examined twenty-five tonsils and five adenoids in thirteen children. None had a family or past history of tuberculosis. Nineteen tonsils were examined microscopically; all were inoculated into guinea-pigs; only one proved tuberculous. All the adenoids were tested on guinea-pigs; four were examined microscopically; none of the adenoids proved tuberculous. Tuberculous microscopical lesions were not found in any case, though numerous sections were made. In the case in which animal inoculation was positive, over a hundred sections were examined without avail. A skiagram of this case showed tuberculous infiltration of the bronchial glands, and a positive reaction to tuberculin was subsequently obtained. Hess thinks that the tonsil was infected by tuberculous food, and that the infection was recent. The bronchial lesions were probably the result of an independent infection, since the cervical glands were not affected. J. D. Rolleston.

The age-incidence of intussusception (*'Lancet,' March* 7, 1908).—**Fitzwilliams** maintains that the relation of age to the incidence of intussusception is remarkable and constant. In 648 cases under the age of twelve years 466, or 71·9 per cent., occurred in children who were not more than twelve months old; 143, or 20·5 per cent., between the ages of one and six years; and only 39, or 6 per cent., between seven and twelve years of age. Very few cases appear before the third month. At the third month we find an abrupt rise in the numbers, during the fourth month the figures nearly double those of the third month, and the rise continues through the fifth month, to reach its zenith in the sixth month. In the seventh month the curve begins to fall, and during the eighth month there is a sudden decline in the numbers, and the curve becomes steadily lower towards the twelfth month. During the second year more cases are met with between twelve and eighteen months than between eighteen and twenty-four months, while the numbers for the whole year more than double those of the third year, and as age proceeds the numbers are found generally to decline. We see, therefore, that intussusception is most liable to occur between the fourth and the seventh months. This monthly variation is probably due to the ignorance on the part of those responsible for the feeding of the child. Too often when the teeth begin to appear unsuitable articles of food are given, such as crusts, patent foods and so on. James Burnet.

Perforation of the nasal septum (*'Med. Press,' March* 18, 1908).—At the Gesellschaft, Vienna, **Goldreich** showed a six-months-old child, the subject of hereditary syphilis, with a perforation of the nasal septum—a rare condition in a child so young. It did not appear to be the result of a single gumma, but rather an inflammatory hyperplastic process in the mucosa, which subsequently involved the perichondrium and cartilage.

T. R. Whipham.

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Original Articles.

THE DEFENSIVE ARRANGEMENTS OF THE BODY AS ILLUSTRATED BY THE INCIDENCE OF DISEASE IN CHILDREN AND ADULTS.

THE WIGHTMAN LECTURE FOR 1908.*

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GENTLEMEN,—The choice of a subject for the present lecture has been a matter of very great difficulty, and if it has not been a very fortunate one I must crave your kind indulgence. It seems to me that the object of lectures such as these is best attained by making an attempt to present a wide view of some general subject and one suggestive of future research rather than to discuss some more limited matter which would be better suited for a paper at an ordinary meeting of the Society. Hence it was among the former class of topics that my choice lay, and it has occurred to me that the subject of the relative resisting power of children and adults against infective diseases was well worth special study.

In dealing with diseases of children and adults one is often struck by the fact that marked variations occur at different ages; indeed, it is the existence of these variations which justifies a partial separation of children's diseases from those of adults, and the establishment of separate children's hospitals, or, at any rate, of wards in general hospitals set apart for the treatment of children. In the present lecture I shall speak only of diseases which are due to the entrance of parasitic organisms from without with special reference to the points of difference in children and adults. I am not able to explain these differences satisfactorily, I can only indicate some of the points which arise in the hope that some members of this Society who have more time and more ability than I have will turn their attention to the study of these matters. I believe that the successful study of the differences in the resisting power of children to infective diseases as compared with adults will give the key to much of the obscurity and difficulty which still surround the questions of infection, protection, and immunity.

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In looking into this subject we find that there are some diseases which practically only occur during childhood, and *vice versâ* that there are certain diseases common in adult life which hardly ever affect children. Again, we find that there are many infective diseases which attack both adults and children, but the young are more especially susceptible to some, while their elders are more susceptible to others. Or, again, we find that some diseases are more virulent in children than in adults, and *vice versâ*. Perhaps the most striking fact of all, and the one to which I wish especially to draw your attention, is that in diseases which are common to both children and adults the organs and tissues which are attacked by the virus may differ markedly according to the age of the patient.

That such differences in the incidence of disease in children and adults are very common is a point which hardly requires any elaboration. The *exanthemata*, for instance, are very often spoken of as children's ailments, and some explain the fact that they are most frequent in children by saying that practically all individuals are highly susceptible to them, and being widely spread, no individual can live long in the world without being exposed to infection. This may be in part true, but I can hardly accept it as a complete explanation of the facts ; I cannot but think that, quite irrespective of opportunities of infection, the susceptibility of the individual varies according to age. Even in the case of children, the exanthemata differ among themselves as to the age when they most frequently occur : for example, measles is not uncommon during the first year of life, and something like 90 per cent. of the cases occur in children under five years of age, while scarlet fever rarely occurs in infants, although patients suffering from it may be present in the house or even in the same room, and the favourite age for scarlet fever is from three to ten years. Then, again, chickenpox occurs at a somewhat later period than scarlet fever; it is not so universally distributed, and it very rarely affects adults.

To take an organism whose life-history is known, we have a very good example of varying susceptibility at different ages in the case of the *pneumococcus*. This organism attacks the body more readily in childhood than in adult life, or as I would prefer to put it, the resisting power of the human body to the pneumococcus is apparently lower in children than in adults; thus it seems to be the fact that pneumococcal pneumonia is more common in children under five years of age than during any other quinquennial period. One of the most interesting points from a surgical point of view is the relation of the pneumococcus to pleurisy and empyema. The organisms which are most commonly at work in setting up these conditions are the pneumococcus, the *Streptococcus pyogenes*, and the tubercle bacillus; other organisms, such as *Bacillus coli*, staphylococcus, etc., are quite rare. Now, the relative frequency of these organisms in cases of empyema differs very markedly in children and adults. Thus, in children over 60 per cent. of the cases of empyema are due to the pneumococcus, about 15 per cent. to the streptococcus, and about 7 per cent. to the tubercle bacillus. In adults, on the other hand, the proportions are: Pneumococcus, 25 per cent.; streptococcus, 41 per cent.; and tubercle bacillus 18 per cent. Thus the pneumococcus is the most common cause of empyema in children and the streptococcus in adults. In children pneumonia is present in cases of pleurisy in from 25 to 50 per cent.; in adults it is present in only about 20 per cent. Further, pleurisy more often becomes purulent in children than in adults; indeed, empyema after pleurisy is about four or five times more common in the former than in the latter.

I think there can be little doubt that the meaning of these facts is that children have less resisting power against the invasion of the pneumococcus than is the case in adults, and this view is strengthened by the fact that we more often meet with pneumococcal invasion of other parts of the body than the lungs and pleura in children than in adults. Thus we find that while pneumococcal peritonitis occurs at all ages it is much more frequent in children, being most common between three and ten years of age. Similarly pneumococcal disease of joints is also most common in children, and the general invasion of the body by the pneumococcus is a very striking feature in early childhood and is most marked in infants, where we may have a regular pneumococcal septicæmia.

I need not give further examples of the general proposition that differences do occur in the incidence of various infective diseases in children and adults respectively, but may at once go on to the consideration of further points in connection with such differences, The question of infection is a very complex matter, and a variety of factors come into play in connection with it. On the one hand, we have the *invading parasites,* and on the other the *defensive arrangements* of the body against this invasion. I need not here go into the questions which relate to the parasites, their virulence, their habitat in the body, their habitat outside the body, the varying ease with which they gain access to the body, and so on, seeing that these points are the same whether the individual attacked is young or old. Passing, however, to the other partner in the infective process, namely, the animal body, we find that there are a variety of conditions which are necessary before the invading organisms can obtain a foothold in the body.

The *first line of defence* of the body resides in all probability in the epithelial tissues which oppose the entrance of infective agents into the body, and differences in the amount of resistance which they oppose to the entrance of organisms exist at different periods of life.

It is not as yet possible to define the exact meaning of the condition of the epithelium which enables it to oppose invasion. It clearly must be a local power residing in the epithelial cells themselves, or in the fixed cells on which they are situated, rather than any general condition such as the presence of opsonins in the blood, etc. It is interesting to note, as shown long ago by Lister, that where the epithelium lining a canal, the sides of which are normally in contact, is intact and healthy, bacteria cannot spread along that canal. This is true in the case of many ducts, such as the urethra, the mammary ducts, the salivary ducts, etc., and Lister used to point to this as a proof of the vital power of the tissues in preventing the growth of bacteria.

A very good example of variation in the defensive power of epithelium according to age is furnished by the behaviour of the *gonococcus,* and two points occur in connection with this organism in children. In the first place there are reasons for believing that the susceptibility of children to the invasion of the gonococcus is greater than in adults; and in the second place the organism attacks epithelial tissues in children, which are more or less immune in adults. The very mode in which infection occurs in the two cases seems to imply a diminished resisting power on the part of children, for in them infection is usually accidental, being conveyed by dirty sponges, soiled linen, etc. No doubt the anatomical development of the parts such as the vulva, as age advances, may render accidental infection less easy in adults than in children, but still it occurs more readily in the latter than this would account for. The incubation period in children is also apparently shorter than in adults. The disease as it occurs in young people after infection is usually more severe than in adults, and there are various observations which seem to show that discharges which are no longer capable of infecting the mucous membranes in adults are virulent for those of children. The greater readiness with which the conjunctiva becomes infected in children may also point to increased susceptibility to the gonococcus, though possibly the fact that in infants the conjunctiva is only one layer of cells thick may have something to do with the greater susceptibility. The special interest, however, centres in the location of the disease in children and adults respectively—namely, in the fact that the vaginal mucous membrane is more often and more violently attacked by the gonococcus than in adults. In adults, as a matter of fact, the disease is usually located in the cervix uteri or in the mucous membrane of the urethra, while involvement of the vaginal mucous membrane is relatively rare and slight. Some, indeed, altogether deny the susceptibility of the vaginal mucous membrane to the gonococcus in adults, and hold that when it is diseased it is only affected by a sort of desquamative catarrh caused by the maceration of the mucous membrane from the passage of the pus over it. While the vaginal mucous membrane in children is thus highly susceptible to the gonococcus it is curious that other complications caused by this organism are not so common nor so severe in children as in adults. No doubt gonococcal peritonitis does occur, and it is quite likely that the so-called spontaneous peritonitis in young girls is often of gonococcal origin. Gonococcal cystitis is also not uncommon, but gonococcal infection of joints is rarer than in adults. It most commonly affects only one joint, usually the knee; hydrarthrosis is not observed, ankylosis is very rare, and on the whole the course of gonococcal joint troubles is more benign and not so chronic as in adults.

Another example of the relation of organisms to the first line of defence is furnished by the behaviour of the pyogenic organisms in the skin. *Multiple abscesses of the skin* and subcutaneous tissues are quite common in infants. Impetigo is also common, but boils rarely occur. The reverse is the case in adults, where multiple abscesses of the skin are quite uncommon, their place being taken by boils. What the explanation of the difference is is not quite clear, but it is quite possible that in this instance it is in the main a question of differences in the anatomical structure of the skin rather than of general defensive arrangements. Thus in children the desquamation of the skin is more active and there is also incomplete development of the corneous layer of the epidermis in various places; in fact, the epidermis in children is very thin and extremely fragile and it desquamates readily, leaving the rete mucosum exposed. The papillary layer of the skin is also very rich in blood-vessels and reacts readily to all irritations.

Having overcome the first line of defence, the parasites either produce a local disease at that part, as we have seen in the case of the gonococcus, or else (and this happens in the majority of cases) they pass on into the lymph or blood stream and are carried to various parts of the body. In this latter case, having passed the epithelial line of defence, they then find themselves in closed tubes lined with endothelium. Apparently some forms of bacteria, having reached the circulating blood, can multiply in it and set up disease, but the great majority, and probably to a greater or less extent all, have to find a local resting place; if they fail to do so they quickly die out. We may imagine the bacteria being carried along in the circulation through the various tissues of the body, investigating these tissues as they pass through them till at last they find somewhere or other in the endothelial lining of the vessels conditions which are favourable for their growth or penetration, and therefore we may assume the existence of a *second defensive arrangement—namely, the endothelium.* Having found a weak spot in the endothelial lining they grow there and produce disease or else they pass through the wall of the vessel as they did through the epithelium, and multiply in the tissues outside. We have evidence that in a good many cases the parasites grow in the endothelial lining of the vessels. In syphilis, for example, endarteritis is the chief lesion and is probably due to localisation of the spirochæta in the inner coat of the small vessels. In the case of tubercle also I pointed out some years ago in my essay for the Astley Cooper prize that many tubercles are formed in the first instance in the interior of the blood-vessels possibly by proliferation of the endothelium, and in some specimens one can see tubercles in all stages clearly illustrating this point.

What the local predisposition on the part of the endothelium and the tissues signifies it is difficult to say. To some slight extent it may have to do with the *general trophic condition of the parts,* as influenced by the action of the nerves. In connection with this point I may refer to the interesting observations which have been made by Mr. Cheatle on the sites of development of epithelial cancer and its mode of spread, in which he produces some very remarkable examples of the spread of cancer along certain definite nerve areas, avoiding neighbouring areas supplied by other nerves. To a considerable extent it may be a question of *pabulum.* That the nature of the pabulum is of very great importance in the artificial cultivation of micro-organisms is, of course, well known. We know, for example, that it is not easy to cultivate the tubercle bacillus outside the body; we know that in cultivating the gonococcus it is necessary to have a little human blood on the surface of the cultivating medium to enable the growth to start; and we know that up to the present investigators have not been able to find a soil and external conditions which are suitable for the growth of various other infective organisms, such as those of leprosy, etc. It is, therefore, not at all unlikely that in the living body the question of suitable pabulum may have a good deal to do with the localisation and growth of the organisms.

An example which seems to point in this direction is that of *ringworm of the scalp.* This disease may affect children of all ages but is rarely noticed before three or after fourteen years of age; it never appears after the age of fifteen, and adults may mix freely with children suffering with ringworm of the scalp without being attacked by the disease, while on the other hand it is extremely infectious for children and will run through a school very quickly. The disease if left to itself disappears spontaneously at puberty, fresh and healthy hairs growing on the affected site. This is a very curious case and it seems difficult to frame a reasonable explanation. The fungus penetrates into the hairs close to the roots, but it evidently does not destroy the hair bulbs, otherwise the hairs would not grow again. It is therefore growing in what is practically dead tissue, or at the best in tissue of extremely low vitality, and the curious thing is that though it grows readily in this tissue in children it cannot grow in what is to all appearance the same material in persons over fifteen years of age. Is it that there is a difference in the chemical composition of the hairs in adults and children, and is it only in children that they provide suitable food for the fungus? Or is it that the fungus penetrates into tissue which still retains a certain amount of vitality, and are there more vitality and more resisting power in it in adults than in children? Whatever be the explanation, I think that this question of the suitability or unsuitability of the food which the parasite finds in the part which it invades must not be overlooked in considering the various factors which go to make up the defensive arrangements of the body.

Another example which may be mentioned in this connection is that of the common *threadworm*, which is only, or at any rate very much more often, found in children than in adults. Threadworms are very common in the large intestine of children, and they probably enter along with the food or drink. They occur in children at an age when their food is practically the same as adults, and yet threadworms are essentially a disease of childhood. May not this again be simply a question of pabulum ? Is there a difference in the contents of the large intestine in children and adults, consisting in the presence of substances suitable for the existence of these worms in the former, such substances disappearing as the individual reaches adult life ? Or is it that there is something in the intestinal secretions of adults which is inimical to the growth of the threadworm and which is absent in children ? This might be an interesting physiological problem to work out. I can hardly think that in this case, at any rate, it can be a question of tissue resistance, for the worms grow in the fæces and can hardly be affected by the living cells lining the canal.

In this connection, also, I may refer to an interesting point—viz., that bacteria of the same species may acquire a special appetite, so to speak, for certain tissues. For example, while we look on the *Staphylococcus pyogenes* as an organism which may cause suppuration indifferently in any suitable tissue in which it may happen to find a proper resting place, we find that in certain cases where fresh developments of these organisms take place in the same individual, they are apt to occur in connection with similar tissues. Thus, I have repeatedly seen cases of staphylococcal osteo-myelitis in which fresh outbreaks of osteo-myelitis have occurred in several bones in succession without the occurrence of suppuration in other tissues of the body, as if the organisms which had settled in the bone in the first instance had acquired an appetite for bone, and when carried to other parts of the body again selected the growing ends of the bone for their development. This is perhaps still better seen in tubercle, where in cases of tuberculous disease of the bone we not uncommonly find that if fresh tuberculous disease occurs it is in other bones, and the tubercle may remain limited to bone for a long time. This is often the case, for example, in infants with tuberculous osteo-myelitis of the small bones of the hands and feet. Again, we have the tubercle bacilli in some cases showing a special tendency to grow in the lymphatic glands and not for a time spreading in other tissues, or in other cases growing in the skin and giving rise to lupus without leading to tuberculous disease elsewhere.

Stress has also been laid by some on the *anatomical arrangements* of the various parts as favouring the deposit of micro-organisms in certain situations. For example, in the case of osteo-myelitis the slower circulation at the epiphysial line may permit the deposit of organisms at that part, and thus account for the localisation in cases of this disease; indeed, it has been found experimentally that pigment granules injected into the blood are deposited in these situations. We cannot, however, accept this as the only, or indeed as a particularly important, factor, for many things point to something much more far-reaching than a mechanical deposition of bacteria. Thus the incidence of disease in various bones differs according to age and also according to sex. For example, osteo-myelitis is most common between the ages of twelve and eighteen, and at that age it is more frequent in the lower extremity than in the upper, and also more frequent in boys than in girls. On the other hand, the disease may attack children at a much earlier period of life, even below two years of age; in that case the upper extremity is affected nearly as often as the lower; the limitation of the disease in the first instance to the epiphysial line is not so marked, and, indeed, the lesions may occur in the epiphysis itself, and boys and girls are affected pretty equally. The anatomical arrangement of the part may possibly exercise some influence in favouring infection and determining the spread of the disease, but it is evidently a very minor factor.

It seems to me, then, that the localisation of the disease is in the main a vital question which may be summed up under the term "*local predisposition.*" As showing the complexity of this subject it may be pointed out that similar tissues in different parts of the body do not show the same susceptibility. Thus we know that the gonococcus seldom affects any mucous membranes except those of the urethra and the conjunctiva. And we shall presently see how tissues of various joints and bones in the body react differently to the tubercle bacillus at different ages. The same is the case if we take more general diseases. Thus in the case of plague Dr. W. J. Simpson points out that bubonic plague especially attacks the lymphatic glands in the groin and the axilla, especially in the groin, no matter whether the infection has occurred by punctures of the surface or in some less defined manner. We must therefore assume that the lymphatic glands in the groin differ in some way or other in their vital relations to these particular organisms from other lymphatic tissues in the body. To take another example, in acute tuberculosis, although we must assume that there is a general flooding of the blood stream with tubercle bacilli and that the circulating blood carries organisms all over the body, we nevertheless find that the bacilli are not deposited and grow anywhere indifferently, but that they select certain organs and tissues. For example, they are seldom found in the muscles and cellular tissues. In the case of infants who die from tuberculosis during the first four months of life it is found that the disease is practically always general, but the parts of the body in which the tubercles are deposited vary very considerably. Thus in post-mortem examinations of these infants tubercles are found in the lungs in all cases, in the bronchial glands in 99 per cent. of the cases, in the liver in 88 per cent., in the spleen in 86 per cent., in the brain in 24 per cent., and so on. And again, taking the brain for example, they are not equally deposited over the whole brain but prefer to locate themselves along the vessels at the base.

This local predisposition varies to a very marked extent with the age of the patient, the parts affected differing at different periods of life. Perhaps the best example of these variations is furnished by the incidence of *tuberculous diseases of bones and joints* at various ages. In the great majority of cases of tuberculous disease where the bacilli which escape into the blood stream are few in number a very close selection is made, and only one or at most a few local deposits occur, and that apparently only under the most favourable conditions. What these conditions are which favour the deposit of tubercle bacilli in a particular part we really do not know, but, as has just been said, they vary with age and to some extent with sex, and also with a variety of so-called predisposing causes, such as injury or chronic inflammation.

Some years ago I collected a large number of cases of diseases of bones and joints in adults and children which had been treated in hospital, and the following remarks are founded on these statistics. In the first instance, taking a general view of the relative frequency of disease in bones and joints at different ages, I would direct attention to the accompanying table, which gives the percentage frequency of the total cases of disease of bones and joints in my list in each quinquennial period up to the age of forty years.

TABLE I.—*Percentage Frequency of Cases of Disease of Bones and Joints in each Quinquennial Period up to the Age of forty years.*

Age-periods—years.	Percentage of total number of cases.	Age-periods—years.	Percentage of total number of cases.
1 to 5	23·3	21 to 25	8·5
6 „ 10	16·0	26 „ 30	8·8
11 „ 15	14·8	31 „ 35	4·0
16 „ 20	15·0	36 „ 40	3·0

This table indicates clearly the great importance of age in relation to the occurrence of these diseases, but it does not accurately represent the facts of the case. Thus it may quite well be that a greater number of cases occur during the first five years of life, because a greater number of persons are alive at that age than during any other quinquennial period. Conversely, for the same reason, it may turn out that the disease is much more frequent than appears to be the case during the later quinquennial periods, owing to the smaller number of persons alive at that time. Investigations of this kind have been made with regard to phthisis, and have led to the surprising result that in Copenhagen, Sweden, and various German cities with regard to which calculations have been made, the danger of phthisis in any given individual constantly increases with advancing age, and that in advanced life a larger proportion of the individuals alive at that age die from phthisis than at the period of life in which it has been supposed to be most common.

Employing the German statistics of the proportion of persons per 1000 alive at various ages, I have calculated the real frequency of the disease in my cases, and in the following table we have the ratio per 1000 of my cases of disease of the seven larger joints, beginning in each quinquennial period. In the second column I give the apparent frequency of the cases without relation to the number of persons alive at the different ages, and in the third column the real frequency as calculated by the above method. I only give the results up to forty-five years of age :

TABLE II.—*Ratio per* 1000 *of Cases of Disease of the Seven Larger Joints in Each Quinquennial Period up to the Age of Forty-five Years.*

Age-period—years.	Apparent frequency.	Real frequency.
1 to 5	232	167
6 „ 10	153	134

Age-period—years.	Apparent frequency.	Real frequency.
11 to 15	150	145
16 ,, 20	153	164
21 ,, 25	85	98
26 ,, 30	88	120
31 ,, 35	41	60
36 ,, 40	30	48
41 ,, 45	20	42

From this table it will be seen broadly that the real frequency of these diseases is actually greater in advanced life than would appear from the ordinary statistics, but still a good deal less than in youth. In my list the disease commences most frequently between one and five years of age; it then declines and rises again between fifteen and twenty years; it subsequently steadily declines, with the exception of slight rises between thirty-five and forty years and forty-five and fifty years. The accuracy of the last numbers, which are not given here, is, however, very doubtful, because the cases in my list which commenced at those ages were quite few in number. Great differences also exist as to the period of life at which the disease commences in the different joints and bones, as is evident from the following table, in which I have indicated the percentage proportion of the cases of disease in each of the seven larger joints, commencing in each decade:

TABLE III.—*Percentage Proportion of Cases of Disease of each of the Seven Larger Joints in each of Five Decades.*

Joints.	Decades.				
	I.	II.	III.	IV.	V.
Hip	30·2	29·3	4·8	—	12·5
Knee	29·5	22·8	18·2	36·6	6·2
Ankle	5·4	5·9	3·6	3·3	12·5
Tarsus	4·6	5·9	8·4	3·3	18·7
Shoulder	—	1·6	4·8	—	—
Elbow	6·7	9·2	6·0	13·3	18·7
Wrist	0·6	8·4	15·8	13·3	6·2

Thus reading the table from above downwards we see that of the total cases of tuberculous bone and joint disease which commenced during the first decade, 30·2 per cent. were cases of hip-joint disease, 29·5 per cent. were cases of knee-joint disease, and so on. Reading the table from side to side, we see the frequency with which disease of each part commences in each decade; thus hip-joint disease commences most often during the first decade, and its frequency diminishes very rapidly. The knee-joint is also very frequently attacked during the first decade, but the fall in its frequency is by no means so rapid, and so on.

Not only does the resisting power of the body vary in the same individual at different ages, but it is very interesting to note that it often varies very considerably in the two sexes. Thus, speaking of tuberculous diseases of bones and joints, I find that of the patients on my list 65 per cent. were males and only 35 per cent. were females. Indeed, most forms of surgical tuberculosis are more frequent in boys than in girls. The following table * gives the percentage relations of males and females (hospital in-patients) in regard to diseases of the seven larger joints, and it will be noticed that not only are males more frequently affected than females but that the proportion differs in different joints. And not only are there differences in the incidence of disease in the two sexes, but the disease in the female seems to be as a rule more benign than in the male. That is a very interesting matter, which, however, I have no time to discuss here. I may also remark that while this is the case with regard to diseases of joints it does not necessarily hold good with regard to some other forms of tuberculous disease. Thus tuberculous peritonitis is almost equally frequent in the two sexes, while lupus is much more common in females than in males.

TABLE IV.—*Percentage Relations of Males and Females in each Joint.*

	Hip.	Knee.	Ankle.	Tarsus.	Shoulder.	Elbow.	Wrist
Males	59·7	57·6	81·9	85·8	50	74·3	75·9
Females	40·3	42·4	18·1	14·2	50	25·7	24·1

The predisposition and resisting power of the body, both local and general, to parasitic invasion vary very markedly under a variety of circumstances and are often *very sensitive to external conditions.* Even the *seasons of the year* apparently have their influence on the resisting power of the body. For example, erysipelas is more frequent at certain periods of the year than at others, especially during February and November, and lupus is said to improve in autumn and to become worse in spring.

One of the most important causes which influence the local predisposition of a part is *injury.* In the case of the epithelial tissues injury is naturally of great importance in connection with their defensive action. If there is a solution of continuity in these tissues parasites may enter through a breach of the surface without being subjected to the action of the epithelium at all. On the other hand, without actually destroying the epithelium, the injury may so depress the vitality of the cells that they can no longer successfully resist the parasitic invasion.

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* I would not, however, press the actual percentages which are mentioned in this table, because in some of them, especially in the case of the shoulder, the number of patients was too small to be of value.

A very good example of the effect of injury is furnished by the history of tuberculous disease of bones and joints, and the facts are of considerable interest. As a rule, where a case of joint disease is referred to an injury the history given is usually that of some slight injury, such as a strain or slight blow; indeed, it is noteworthy that after severe injuries in tuberculous subjects, such as fractures or amputations, tuberculous disease does not occur at the seat of injury. Thus, I can recall more than one instance of patients suffering from tuberculous joint disease who sustained fractures, in one case of the shaft of a bone, the epiphysis of which was already diseased, where the fractured ends have reunited without the development of any tuberculous disease at the seat of injury. And as regards amputation, unless the operation is carried out through parts which are actually diseased, one does not expect to have a tuberculous stump as a result, however many tuberculous lesions the patient may suffer from. We also not uncommonly notice that after tuberculous joint disease has become quiescent, or even apparently got well, it may recur as the result of a slight injury.

A further point which is worth mentioning is that injury to some joints seems more likely to be followed by tuberculous disease than injury to other joints. This fact is in accordance with the view which the above tables must lead us to assume, that the different joints vary in their predisposition to tuberculous disease, and that consequently injury is more likely to have an effect in determining its occurrence in those joints which are naturally the most predisposed.

Lastly, I may mention that it seems from my statistics, with which I need not trouble you here, as if injury were not only an active agent in the production of these diseases, but also determined a graver form. In my list the cases in which injury was given as a cause were on the whole more serious than those where no cause was assigned, whether we judge by the occurrence of suppuration, the results as regards complete recovery, or the severity of the treatment required for the cure.

One very obvious way in which injury may act in determining the occurrence and localisation of infective diseases is by leading to extravasation of blood, and if bacilli happen to be floating in the blood, to their consequent deposit in the part, in this way breaking down the second line of defence—namely, the endothelium—just as the first line of defence may be broken down. Apart from actual rupture of vessels and extravasation of blood, injury may favour the deposit of bacilli in the part, in that it leads to changes similar to those noticed in the early stage of inflammation. These changes involve, I believe, in the first instance, a diminution in the resisting power of the tissues. I fancy that at the present time such a view of the result of the early stage of inflammation would hardly be assented to, because the leucocytosis which accompanies it is looked on as a most important part of the protective arrangements of the body. I would, however, refer to Lister's early observations on inflammation, especially on the effects of inflammation on the activity of the pigment cells of the frog, to show what a paralysing effect irritation has in the first instance on the functions of the tissue cells of the affected part, and my belief is that the essential resisting power of a part as regards local infection lies in the tissue cells rather than in the adventitious leucocytes which come into it subsequently, and this may explain the greater severity of the disease after injury. I have formerly pointed out that where an extra large number of infective agents enters a part a more severe form of disease always results, and it must be remembered that this question of dosage of infective agents is, of course, relative to the resisting power of the part. Where, therefore, a similar quantity of bacteria has entered two parts, one of which has been rendered less resistant as the result of injury, this dose will act in the latter case in the same way as if a large dose had been administered under ordinary circumstances.

Resisting power is also influenced by a variety of conditions apart from those already mentioned, and these are often spoken of as *predisposing causes of disease.* There seems no reason to doubt that exposure to cold especially affecting a sensitive mucous membrane is a potent factor in permitting the entrance of pathogenic organisms, and very probably has a great deal to do with the penetration of such organisms as the pneumococcus into the body, especially into the lungs. *Bad hygiene, bad food, starvation, alcoholism,* etc., are also important agents in lowering the resisting power of the body to disease, and the same is frequently seen as the result of *other illnesses,* such as influenza, measles, chickenpox, etc. To take the case of multiple abscesses in the skin in childhood to which we have already referred, we find that they often follow acute and chronic illnesses. Thus, they are frequent during convalescence from infective diseases, such as typhoid fever, pneumonia, influenza, etc., and in the course of measles, scarlet fever, and smallpox abscesses and even gangrene of the skin frequently occur. They are also quite common in tuberculous children. Presumably, therefore, these diseases lower the resistance of the body to the staphylococcus, and yet, curiously enough, taking tuberculosis for example, I find no evidence that the opsonic index to staphylococcus is as a rule seriously lowered in cases of tuberculosis.

In connection with this question of variation in the resisting power at different ages a very interesting point arises which is worth mentioning here. One would naturally assume that if one individual is more susceptible than another to a disease he would also be affected by that disease in a more severe form, and no doubt this is true in a very considerable number of cases, but there are a number of very remarkable exceptions. In the case of the exanthemata, although I cannot speak with authority, I have seen it stated, and I have been brought up in the belief, that if an adult is attacked the disease is more likely to assume a severe type than in the case of a child. And yet we have already assumed that an adult is less susceptible than a child. In the case of pneumococcal invasion of the lungs, although the largest number of cases occur below twenty years of age and therefore presumably during the most susceptible period, the greatest mortality takes place in patients above twenty years of age. In the case of tubercle we find also that while it is most common in young people the disease is most obstinate and less amenable to treatment in old people. And again with regard to tubercle, while it is not common during the first year of life, when it does occur it assumes a very grave type owing chiefly to the fact that it is very apt to become generalised, and this is also true in the case of other infections, such as pneumococcal, streptococcal, etc. We have, however, many examples in the other direction. Typhus fever, for instance, is rarer in children than in adults, but it is not so dangerous in children as in adults. Again, typhoid fever is not so common in young children as in young adults, being most frequent between twenty and thirty years of age and quite exceptional below eight years of age. We may therefore assume that susceptibility to typhoid fever is small below eight years of age, that it reaches its height between twenty and thirty years of age, and again diminishes later. But the curious point is that the mortality increases as the age advances, being 11·3 per cent. in children below ten years of age and reaching 34 per cent. in persons over fifty years of age. Other examples of both these points might be given, but the above will suffice for our purpose.

A probable explanation of these facts is somewhat difficult to formulate, but the two following points are, I think, worth taking into consideration. In the first place, I have already referred to the question of relative dosage of bacteria in speaking of injury, and it is quite possible that this point also comes into play here. Thus, while a comparative small dose will suffice to set up the disease in a susceptible individual it requires a larger dose where the subject is less susceptible. And in accordance with the results which I obtained some years ago the resulting disease with the larger dose in the less susceptible individual would be more severe than that with the smaller dose in the more susceptible person. But in the second place I would point out that it is as a rule when the less susceptible individual is over the average age that the resulting disease is more severe, whereas this is not necessarily the case when he is under the average age, always excepting the first year of life. Hence it is probable that another factor besides resisting power comes into play in infective disease, and it is with the view of calling attention to this other possible factor that I have introduced the matter here; this factor may be indefinitely spoken of as *recuperative power*. It is quite probable that apart from the agents which actually take their place in the fight against the invading parasites there are other agencies which have to do with the maintenance of the health of the body and with the restoration of strength after it has been subjected to infection, and those I should group under the term "recuperative power." And I am inclined to think that some factor of this kind plays an important part in the recovery of patients from infective disease, quite apart from any anti-toxic or anti-bacterial agencies. Leaving out the question of infective diseases we know that as people get older they do not recover so quickly and perfectly from injury or illness as is the case in youth. To some extent, and probably to a considerable extent in old people, this has to do with the gradual onset of degenerative changes in the various tissues and perhaps more especially in connection with the blood-vessels. If I am correct in suspecting the existence of some further vital energy of this kind its importance in treatment cannot be overlooked, and especially it warns us not to pin our faith as regards treatment to one single point but to try to influence all the agencies which have to do with the well-being of the individual.

Time will not permit me to pursue this subject further. I could have mentioned many other facts in illustration of the points to which I have referred, but those which I have picked out seem sufficient to show the bearings of the matter and to indicate its great interest and importance. Especially, I think, there can be no doubt of the existence of local conditions in the tissues and organs of the body which have a very important bearing on the occurrence of infection and on recovery from it. Indeed, in my opinion, the local conditions, which we have grouped together under the heading of "local resisting power," are of much more importance than any general agency which may be present in the blood stream.

I have already indicated some points which have to be taken into consideration in connection with this question of local resisting power, but in spite of all the work that has been done we are still in the stage of theory. One point I may refer to in connection with this matter, and that is the remarkable difference as regards leucocytosis in the new-born and in later life, taking the example of erysipelas. Erysipelas shows very marked differences in gravity at various periods of life and under various circumstances, and it is more especially grave in the case of infants. Infantile erysipelas usually appears from the tenth to the fifteenth day after birth, and generally spreads from the umbilicus. Its mortality at that age is at least 50 per cent., but the mortality steadily falls in older children. On examining the parts in infantile erysipelas the interesting fact is observed that there is almost complete absence of local leucocytosis. In the adult, leucocytes group themselves in large numbers around and within the blood and lymphatic vessels, while in the new-born one finds the vessels dilated it is true, but this is due to the presence of masses of streptococci and not to leucocytes. Enlargement of the lymphatic glands, which also occurs in adults, may be very slight or absent in children.

On the other hand, leaving out the first year of life, there seems to be a slight increase in general leucocytosis in children under ten years of age as compared with older people in some of these infective conditions. This has been especially pointed out in cases of otitis and mastoiditis.

That the conditions summed up under the term "local resisting power" are much more important than the more general conditions seems to me to be certain, and I have mentioned quite a number of points which indicate this. I have especially referred to the varying local incidence of disease at different ages and under different conditions; and I may also mention another very striking point as showing the importance of local as compared with general defensive arrangements. It is this, that in some cases one finds a disease making good progress towards healing at one part of the body, while at the same time a fresh outbreak is taking place at another. Take, for example, the case of tertiary syphilitic ulcerations. One of the important diagnostic points after a tertiary ulcer has lasted for some time is the tendency which it has to heal at one side while it spreads at the other, in this way giving rise to the serpiginous form of these ulcers. If the healing were due to general conditions in the serum, why should it not occur all round, and why, if the resisting power has been so much improved as to lead to healing at one part, does the disease actually progress at another part in the vicinity? The same is frequently seen in the case of tuberculosis; it is not at all uncommon to find one tuberculous deposit healing or becoming quiescent, while another becomes active or a fresh one actually appears. A very good example of that is seen in tuberculosis of the epididymis, where the disease on the one side and also in the vesiculæ seminales may be steadily improving when all of a sudden the other side becomes affected and not uncommonly runs a more virulent and rapid course than the first. I have seen exactly the same thing happen on several occasions in cases of tuberculosis which had been under steady opsonin treatment for a long time, some of them over a year. Thus, in one case of tuberculous epididymitis which I recall the disease in the epididymis was particularly acute in the first instance, and I advised opsonic treatment rather than operation. Ultimately, however, as the testicle became completely destroyed by suppuration, castration became necessary. Opsonic treatment was still steadily continued under the best auspices, but in spite of that, residence at the seaside, etc., the disease appeared acutely in the other epididymis, while the treatment was still going on, and I had to perform an epididymectomy without delay in order to save the other testicle. The course which the disease followed was in reality the same as if no attempt had been made to increase the general resisting power.

At the present time it is the fashion to look on the opsonic content of the blood as the essential agent concerned in bringing about immunity and cure in the case of infective diseases. This is a matter on which neither time nor knowledge permits me to enter at length. I have, however, searched the literature, inquired among investigators, and had a few observations made for me without finding any marked differences in the opsonic index to different organisms at various periods of life corresponding to the variations in the incidence of disease, and in their course at different ages;

nor has any difference in the opsonic index to various infective organisms been pointed out as regards sex, and yet, as we have seen, there are noticeable variations in the incidence and severity of these diseases in the two sexes. It must, however, be pointed out that this matter of alterations in the opsonic index in connection with age, sex, etc., has not yet been worked out from the point of view taken in this lecture, and we must not, therefore, lay too much stress on our present knowledge on this point. It is a matter which it would be quite worth while looking into. The only investigations actually bearing on this point which I have come across are some described by Dr. J. H. Wells in the May number of the 'Practitioner.' He has made observations on the opsonic index in infants under one year old, with the result that he finds marked differences in young babies as compared with older people. He comes to several conclusions, of which I may mention the following: "A low opsonic index is not diagnostic in children under one year old." In infants a low opsonic index is not inconsistent with health and the child may be thriving well with a declining index." "The anti-bacterial defence in children cannot depend upon the opsonic content of the serum." These are very important conclusions, and if found to apply to a sufficiently large number of cases they raise the question whether the significance of the opsonic index and opsonins generally is being properly interpreted. Although infective troubles when they do occur in infants are, as a rule, more acute than in older children, as already instanced in the case of tuberculosis, erysipelas, etc., nevertheless infants do not develop these infections so readily as children do after the first or second year of life—in general terms their defensive power is greater. But if it is a fact that the anti-bacterial defence in infants does not depend on the opsonic content of the serum, and yet at that period their defensive powers are high, is it right to assume that at a later period of life the anti-bacterial defence does depend on the opsonic content of the serum? May there not be some other interpretation of the variations in the opsonic index than that which is put forward by Wright and which is being so extensively translated into practice?

I must confess that while there is much that is interesting and important in the extensive work which is at present being done on opsonins, it would be more convincing to me if the theories on this matter were less complete and simple and if the writings were tinged with a little philosophic doubt. Unfortunately, when we come to study the results of the application of these theories to practice they do not work out as they ought to. In some cases good apparently does result, while in others it is an open question whether the benefit which follows would not have occurred to an equal extent without the vaccination; in many instances, however, and my experience especially concerns tubercle, one cannot convince oneself that the slightest benefit has resulted—in some, indeed, the condition seems to have become worse. Nor even in the cases where benefit has resulted is it clear that the bacteria have been completely eradicated as one would expect if the theory were correct. I think that all we can say about these matters at present is that they are highly interesting from a scientific point of view and that their continued study is highly desirable, but that it is very doubtful if the opsonin theory is the complete solution of the problem. For my own part, I feel satisfied that something is still wanting, and I believe that the discovery of that something will be more likely to be made in connection with the study of the local conditions of resisting power than of the general conditions of immunity. The time has certainly not yet come when we can with advantage to our patients beat our knives and stethoscopes into hypodermic needles and syringes, discard all our past experience and knowledge, and transform ourselves into immunisators.

HENOCH'S PURPURA AND INTUSSUSCEPTION.*

By Hugh Lett, M.B., F.R.C.S.,

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James P—, aged 3 years, was admitted to Poplar Hospital on Sunday, September the 29th, 1907. The following history was obtained from his mother.

He was quite well until Friday, September the 27th, and had been playing about as usual until 4 p.m., when his mother gave him a bath. He then complained of pain in the left leg, and his mother noticed that the knee was swollen. The same night the left elbow was swollen. The next morning there was considerable swelling of the scrotum and both legs.

No spots were seen on Saturday afternoon, September the 28th, but in the evening the mother noticed one or two "purple watery blisters" on the left leg. The left ankle was then so swollen that his sock had to be cut before it could be taken off.

The bowels were opened naturally until Friday the 27th. On that day they were opened frequently, the motions being only partly formed. On Saturday morning he had one natural motion.

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* Read before The Society for the Study of Disease in Children, April the 10th, 1908.

He did not complain of abdominal pain until Saturday morning, when he was suddenly seized with a paroxysm of pain which made him scream. Similar attacks of pain associated with screaming fits recurred at intervals until his admission to hospital on the following day. Blood and mucus were passed *per anum* on Saturday evening and this was repeated several times during the night. He vomited once on Saturday morning after screaming with pain.

There was no history of sore throat; he had never had scarlet fever or any other illness, except measles when he was six months old. There was one other child at home at the time who was quite well.

On admission the temperature was 99·4° F. and the pulse-rate 140 per minute. The boy looked ill, and there were small purpuric patches on the ears, legs and scrotum.

The abdomen was slightly distended, though not tender, and palpation revealed a sausage-shaped swelling in the right lumbar region. The spleen could not be palpated.

On making a rectal examination nothing abnormal was felt, but when the examining finger was withdrawn it was covered with blood.

A small motion passed after the child's admission to the Hospital was examined and found to consist of blood and mucus only, without a trace of bile.

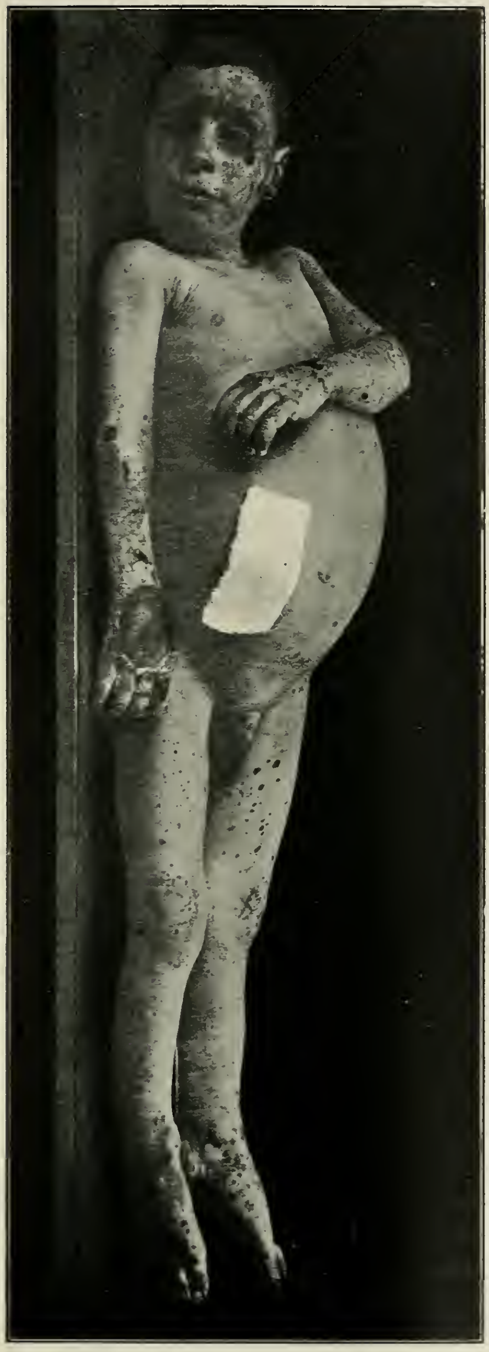
Laparotomy was at once performed. A two-inch incision was made through the right rectus muscle, and an ileo-cæcal intussusception found. This was reduced without difficulty, and the wound closed with through-and-through sutures of silkworm gut.

Subsequent history.—On September the 30th, the day after the operation, the boy appeared to be much better. He had had a normal motion, the vomiting had ceased and there was no abdominal pain.

The purpura, however, was a little more marked. The patches were of irregular contour though small in size, the majority being not more than half an inch in diameter, but they were beginning to become inflamed and to slough. They were then scattered over the face, ears, scrotum and legs.

On October the 2nd diarrhœa set in, and during the twenty-four hours there were nine motions. There was no vomiting, but the stools contained blood. There was some abdominal pain.

By October the 3rd the purpura had considerably increased;



there were large patches on the face, hands, and ears, which were turning black and beginning to form blebs. Small spots had appeared on the legs, thighs, and forearms, but there were none on the chest or abdomen. The diarrhœa had ceased and the stools were free from blood, though they were still loose.

On October the 6th the boy vomited four times and complained of abdominal pain again.

On October the 7th the purpura was still more pronounced on the face, hands, and legs. The right hand was swollen out of recognition. It was black and the fingers were becoming gangrenous. The left hand was swollen and œdematous between the purpuric patches.

The abdomen was distended, the laparotomy wound was purpuric and sloughing, and a coil of intestine was seen lying at the bottom of the wound. Vomiting was persistent, and the stools were composed of blood and mucus.

The abdomen became more and more distended, and the presence of free fluid in the peritoneal cavity was demonstrated.

The patient died on October the 9th.

At no time did the vomit contain blood, the urine was free from blood and albumen, and the spleen was not palpable. The temperature varied between 99° F. and 102·4° F. from October the 4th to October the 7th, and then remained at about 99° F. until the end.

Post-mortem.—There was general septic peritonitis. An enteric intussusception was found eighteen inches from the ileo-cæcal valve. It was five inches long and irreducible.

The spleen and other solid viscera were normal, and no submucous hæmorrhages were found in the intestines. Peyer's patches were not enlarged. On laying open the intussusception the intussusceptum was seen to be intensely congested and thickened towards its apex, but it was not possible to say that the intussusception had been directly caused by a sub-mucous hæmorrhage.

The above case, briefly epitomised, is as follows: Frequent stools, partly formed, on September the 27th; the same evening pain and swelling about the left knee and later about the left elbow. The next morning swelling of the scrotum and both legs, and severe paroxysms of abdominal pain, probably due to the formation of the intussusception. In the afternoon what are described as one or two purple watery blisters were seen on the swollen left leg. The following day the intussusception was operated upon and reduced. The purpura increased; there was passage of blood *per anum* three days later; four days later a second intussusception occurred. Death three days later.

The case was one of Henoch's purpura, complicated by the presence of two separate intussusceptions occurring at an interval of nine days.

I do not propose in the short time at my disposal to enter into an elaborate consideration of Henoch's purpura; suffice it to say that Henoch (1) in 1874 brought forward a number of cases of purpura which were associated with intestinal colic, vomiting, intestinal hæmorrhage, and frequently painful swelling of the joints. Important articles have since been written by v. Dusch and Hoche (2) Sutherland (3) and others, showing that Henoch's purpura is a definite clinical entity. Other communications on the subject have been made by George Carpenter (4), Couty (5), Vierhuff (6), Osler (7), and Bristowe (8), while cases have been recorded by Burrows (9), Silberman (10), Raymond Crawfurd (11), Theodore Fisher (12), Zimmerman (13), and others.

The object of this paper is to consider Henoch's purpura from a surgical point of view and to discuss chiefly the question of diagnosis. Firstly, the differential diagnosis between Henoch's purpura and intussusception, and secondly, the diagnosis of an intussusception occurring during an attack of Henoch's purpura. That there is room for such consideration is proved by the reporting, not only of cases of Henoch's purpura which were operated upon as cases of intussusception when there was no intussusception, but also of cases in which an intussusception occurred during an attack of Henoch's purpura but was not recognised until the patient arrived in the post-mortem room.

At first sight it would appear that the diagnosis of Henoch's purpura presents no great difficulties, and that to anyone acquainted with the disease it should be easy to distinguish between it and intussusception. Unfortunately this is by no means the case, for as in Dr. Sutherland's (3) first case, the abdominal pain and vomiting may occur some time before the appearance of any cutaneous lesions. Theodore Fisher (14) has described a case of Henoch's purpura which proved fatal, and in which there were no hæmorrhages into the skin. Osler (15) has also pointed out in an article on the visceral lesions of the erythema group that visceral crises may occur independently of the skin lesions. A purpuric eruption, however, joint pains, hæmaturia, vomiting of blood, or a history of a previous similar attack, should remind one that the patient may be suffering from Henoch's purpura. In the absence of all these signs it may also be remembered that whereas Henoch's purpura is rarely met with in children under three years of age, and generally occurs in children several years older than this, the great majority of cases of intussusception occur in babies. Out of 187 cases of intussusception Mr. Barnard (16) found that 135, or 72 per cent., were under one year old, and Mr. McAdam Eccles (17) obtained a very similar result from a smaller number, viz. out of 40 cases, 27, that is, 68 per cent., were under one year. Mr. Fitzwilliams (18), again, in 648 cases under the age of twelve years, found that 466, or 71·9 per cent., occurred in children not more than twelve months old, and only 6 per cent. between the ages of seven and twelve years.

The joint pains are, as a rule, temporary, and pale into insignificance when the abdominal symptoms arise. They are, however, present in a considerable proportion of cases, v. Dusch and Hoche finding them in 40 out of 44 cases recorded by them.

The character of the onset of the abdominal pain will not materially help the diagnosis, as in both intussusception and Henoch's purpura it is sudden and may be preceded by diarrhœa. I have, however, operated upon two cases of intussusception which were immediately preceded by, and apparently caused by, a fall on to the abdomen.

In both conditions the pain is paroxysmal and extremely severe; between the paroxysms the patient is fairly comfortable, though in the later stages of intussusception the pain becomes more continuous. A slight rise of temperature is not uncommon in Henoch's purpura, but may also be met with in intussusception.

Vomiting is not an urgent sign in intussusception until the later stages, and though the child may vomit once or twice at the onset, it usually ceases or is only very occasional until the condition becomes very grave. If severe vomiting is present from the beginning, and especially if the vomit contains blood, the probabilities are against the case being one of intussusception. Mr. Harold Burrows (9) is strongly of opinion that his patient had fæcal vomiting before admission to hospital, though there was none after admission, and he alludes to another case in which fæcal vomiting is said to have occurred, but we must wait for further evidence on this point before we can draw any conclusions from these two cases. Tenesmus is an early symptom in intussusception, and frequent tenesmus with the passage of mucus and blood *per anum* is in favour of intussusception, though tenesmus may occur in Henoch's purpura. Mr. Barnard (19) has pointed out a sign which is of considerable value in the diagnosis of acute intussusception in babies; the blood and mucus on the napkin are carefully examined by the naked eye for the presence of bile, and if bile is absent he considers it a proof of the presence of an intussusception. In thirty-seven cases of intussusception at the London Hospital bile was only present on the napkin on one occasion; the sign therefore only failed once. In four cases of acute ileo-colitis which were admitted to the hospital as possibly cases of intussusception, bile was seen on every occasion. Unfortunately this test does not hold good in older children.

But it is in the local abdominal signs that most interest centres. In Henoch's purpura as a rule the abdomen is not tender, but in various cases it has been described as being "distended and resistant" (Sutherland) (3), "extremely tender on pressure" (Theodore Fisher) (12), and as being not distended but "generally tender and rigid, especially in the lower part" (H. Burrows) (9). In intussusception the abdomen is neither distended nor tender at first, though the intussusception itself is tender, and manipulation will cause it to harden and will bring on an attack of pain.

There is yet one more sign to which I wish to allude. It is, I believe, the crucial test, and the one which should be relied upon above all others in making a positive diagnosis of intussusception. I refer to the presence of a tumour. Statements vary as to the frequency with which a tumour can be felt. Rose and Carless (20) say that a tumour can be felt in about half the cases. In Mr. McAdam Eccles' (17) forty cases, a tumour was found in thirty-two, that is, in 80 per cent. Mr. Barnard (21) says that an abdominal tumour will be found in 75 per cent. of the cases if an anæsthetic is given; and Mr. H. S. Clogg (22) found a tumour in fifteen out of sixteen cases. It is possible, however, that if a careful examination is made by the rectum and abdomen, with an anæsthetic if necessary, a tumour will be found still more frequently. I have operated upon twenty-four cases of intussusception, and in every case I have been able to feel a tumour before operation, either by the rectum or through the abdominal wall. In a few cases, however, it was necessary to anæsthetise the patient before the tumour could be found. The tumour is sausage- or kidney-shaped, and during an attack of pain becomes more definite. It is freely movable and can often be partially reduced by manipulation through the abdominal wall, slipping from the grasp in a very characteristic way.

I know of one case in which hæmorrhage into the mesentery was thought to be an intussusception, and have heard of another in which a collection of coagulated blood within the lumen of the gut was similarly misinterpreted. Hæmorrhage into the intestinal wall may produce a tumour which can be palpated, but in most cases it will lack certain features which are characteristic of an intussusception. For instance, it will not have the slight curve which is produced by the drag of the mesentery on the intussusceptum, it will not contract and become more obvious on palpation, nor will it be possible to partially reduce it by manipulation through the abdominal wall.

A very interesting case has been recorded by Greig (23). The patient was a boy, aged 9 years. Six days before his admission to hospital he vomited, and the following day complained of pains in the legs and had some diarrhœa. Two days later he was better, but the left knee was swollen. The following day the abdominal pain and diarrhœa returned and a few purpuric spots were seen on the legs. Two days later he was admitted to the hospital. He was then vomiting small quantities of brownish-yellow offensive fluid. The abdomen was tense and rigid, but not distended, the rigidity being most marked below and to the right of the umbilicus. Under chloroform, a small firm tumour was felt in the right iliac fossa. It was freely movable and slipped away from between the fingers. No purpuric spots were observed then. Laparotomy was performed, and the tumour was found to be due to great congestion of the lower end of the ileum, which projected like a collar into the cæcum. The abdomen was closed and the wound healed by first intention. Two days after the operation the left side of the face was much swollen and the left eye almost closed. Later, this became discoloured and evidently purpuric. Several days later there was a profuse purpuric eruption on the hands, legs, and body.

This case shows how extremely difficult it may be to distinguish between hæmorrhage into a limited portion of the intestine and a very short intussusception. In this case it was only actual inspection and palpation of the gut that determined the diagnosis.

The tumour, of course, was a small one, but there can be no doubt that the length of an intussusception may vary greatly from time to time, the intussusceptum not only advancing but also receding to a considerable extent, and possibly spontaneous reduction may take place. This, at any rate, is the explanation usually accepted when the surgeon, after making a diagnosis of intussusception, opens the abdomen and finds no tumour but only congestion of the lower end of the ileum and adjoining part of the cæcum. But, as Dr. Sutherland asked in the discussion which followed the reading of this paper before The Society for the Study of Disease in Children, may not some of these cases really be examples of Henoch's purpura in which the cutaneous lesions are absent ?

So much for the differential diagnosis between Henoch's purpura and intussusception ; but it may be necessary to diagnose an intussusception which has occurred during an attack of Henoch's purpura.

Dr. Sutherland (3), in a valuable paper in 'Pediatrics,' has recorded an example of this, and Vierhuff (6) has recorded a case of purpura hæmorrhagica in an adult, who developed an intussusception which was ultimately passed *per anum.* Here, again, diagnosis must rest on the presence or absence of a tumour. In the case of James P—, which I have described above, there was a definite sausage-shaped tumour, and although the purpura was noticed and the possibility of the hæmorrhage from the bowel being due to Henoch's purpura fully recognised, an intussusception was diagnosed from the presence and character of the tumour. As Sutherland suggests, severe tenesmus, if present, is also a sign of considerable value.

One other point of interest in my case may be alluded to: the wound showed no signs of healing but became purpuric and ultimately gave way entirely. I have also heard of another case where the child died from hæmorrhage from the wound. On the other hand it must be admitted that the wound has in other cases healed well by first intention.

The occurrence of a second intussusception a few days after the reduction of the first is most unusual. That the intussusception found on post-mortem examination was not merely a recurrence of the original intussusception is proved by the fact that the first one was ileo-cæcal, whereas the second was enteric, and situated ten inches from the ileo-cæcal valve; also by the facts that the vomiting and pain ceased immediately after the operation, that the bowels were opened, and that the child was free from all signs of intussusception for seven days. Unfortunately, when the second intussusception occurred the child's condition was such that any further operation was out of the question.

In conclusion, there are a certain number of cases in which the diagnosis is extremely difficult. The greatest difficulty is perhaps presented by those cases in which a diagnosis of Henoch's purpura has been made, but it is doubtful whether an intussusception is present or not. The wisest plan to adopt is not to operate unless a definite tumour can be felt. For many of the symptoms of an intussusception, viz. vomiting, tenesmus, blood and mucus in the stools may be present, although there is no intussusception. If, when the diagnosis is made, the skin lesions are extensive, reduction should be attempted by means of injection, and only when this has failed should laparotomy be performed as a last resort.

It may be suggested that an exploratory laparotomy is a small matter, and should be performed if there is any doubt as to the diagnosis, but the subsequent condition of the wound may be so serious that a laparotomy is not to be lightly undertaken. Intussusception is a rare complication of Henoch's purpura, and further, in the great majority of cases of intussusception a tumour can be palpated; when, therefore, the risks associated with a laparotomy wound are also taken into consideration, it seems obvious that if symptoms of intussusception make their appearance during an attack of Henoch's purpura operation is inadvisable, unless a characteristic tumour can be palpated.

Apologies are perhaps due from me for the length of this paper, but I think that the matter is one of some considerable importance, and so little has been written on the subject that I feel justified in going into the matter in some detail before this Society, which has done so much to encourage the study of disease in children.

I must express my indebtedness to Mr. H. E. Ridewood, late Senior House-Surgeon at the Poplar Hospital, for many of the notes of the case, and also to Mr. Hugh M. Rigby, for whom I was acting when the case was admitted to hospital, for permission to publish it.

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The Society for the Study of Disease in Children.

PROVINCIAL MEETING—*continued.*

At the Provincial Meeting of the Society held at the General Hospital in Birmingham on Saturday, June the 20th, the following cases and pathological and microscopical specimens were exhibited :

Congenital Dislocation of the Hip.—Mr. Frank Barnes showed four cases of congenital dislocation of the hip, illustrative of the paper read before the Society. Two were cured, one being a case of double and the other a case of single dislocation. The third was in the process of cure, and the fourth was an incurable case.

Osteo-psathyrosis.—Mr. Frank Barnes also showed a boy, aged 8 years, suffering from osteo-psathyrosis. The patient had never walked, and since his birth had had no less than eighteen separate fractures of the thighs and arms. The radiographs showed the site of some of these in the femora, which also presented a marked condition of coxa vara. The pelvis was of a marked tri-radiate character, and the chest wall was flattened from side to side with a prominent sternum, giving it a barrel-shaped appearance. The boy's sister, aged 10 years, also suffered from the same condition, having had a similar number of fractures.

Unresolved Pneumonia.—Dr. Foxwell showed a girl, aged 5 years (Case 1), suffering from unresolved pneumonia. She had broncho-pneumonia in April, 1907, and was discharged from hospital on May the 17th, 1907, with the lungs not cleared. Condition on June the 18th, 1908 : About five or six times a week after running or excitement she brought up several mouthfuls of "yellow phlegm." There was no expectoration or cough at other times. There were signs of dilated tubes at the posterior base of each lung, and there was also evidence of fibrosis. The heart was dilated and the liver enlarged. The general health was fair.

Case 2.—Girl, aged 17 years, had tonsils and adenoids removed on February the 20th, 1908, whilst suffering from a severe cold, and had never been well since. Admitted to the Queen's Hospital on May the 20th with "chronic pleuro-pneumonia of the base of the right lung." The sputum was very fœtid. At first the signs of dilated tubes were evident, but now these are obscure, and the sputum has fallen from 5 oz. to 2 drachms. The fœtor has gone as well as her septic pallor. The signs of fibrosis of the lung and pleura still exist. The treatment has been thorough emptying of the chest twice a day with an inhalation of 5 per cent. solution of formalin.

Case 3.—Boy, aged 13 years. Six years ago adenoids and tonsils removed during an acute catarrh. Severe double pneumonia after, ending in double bronchiectasis with fœtid sputum. By emptying the chest twice daily the fœtor went, but the bronchiectasis with purulent sputum still exists.

Effect of Schott Movements in Heart Disease.—Dr. Foxwell also showed two cases of heart disease which had improved under treatment with Schott movements. Dr. Foxwell said he was glad to record these two cases, for in the large majority of hospital patients in whom he had tried Schott movements the result had been negative or injurious.

Splenic Anæmia: Banti's Variety.—Dr. Foxwell also showed a boy, aged 15¼ years, who was quite well until five years ago, when jaundice was first noticed. This has continued almost without change ever since. He was admitted for the first time to the Queen's Hospital in March, 1905, with severe epistaxis. The liver was then one inch below the ribs, and the spleen reached to the umbilicus. No enlargement of the lymphatic glands had ever been noticed. The epistaxis has continued on the average about twice a week. The boy is now intelligent, pale, jaundiced slightly, in fair but delicate health, and able to work as a jeweller except during the epistaxis.

Cerebral Diplegia.—Dr. Kauffmann showed a boy, aged 13 years. The case was regarded as being, in all probability, one of cerebral diplegia in an early stage, on account of its early commencement, its slow but steady progress, the absence of any wasting, and the peculiar tendency to fall down. The points against the diagnosis were: (1) The absence of mental change, (2) the very small degree of spasticity, (3) the total escape, after thirteen years, of the arms. But it was considered on the whole that the signs and symptoms were in favour of the diagnosis mentioned.

Anterior Curvature of the Tibia.—Mr. Albert Lucas showed a boy, aged 13 years. There was an extensive anterior curvature of the left tibia. The curvature had developed in the last six months. It was regarded as due to congenital syphilis, although there was no history or other evidence of that affection.

Splenectomy, for Ruptured Spleen.—Mr. Victor Milward showed a boy, aged 1½ years, upon whom splenectomy had been performed on account of a ruptured spleen. The accident occurred on April the 23rd, 1908, the boy being run over in the street by a cart. The operation was performed immediately, and the child did well except that the abdominal wound suppurated somewhat seriously. Between April the 27th and June the 4th five examinations of the blood were made, and it was found to possess a leucocytosis of between 12,000 and 25,000. Much of this was probably due to the presence of pus, but nucleated red cells were also discovered. Fresh spleen pulp and spleen tabloids were given for the first month. The child had perfectly recovered on June the 12th, 1908.

Depressed Fracture of the Right Parietal Region.—Mr. Milward also showed a boy, aged 6 years, who had been admitted into the General Hospital in April, 1908. He was then suffering from a suppurating wound of the right parietal region, and had paresis of the left side of the face, the arm, and slightly also of the left leg. He was semi-conscious, irritable, restless, and for the most part lay curled up in bed resenting any interference. An operation was performed and a slightly depressed fracture of the right parietal region was found. As this did not seem sufficient to account for the symptoms, the dura was incised and the right side of the cerebrum explored with a trocar and then with the finger. Neither blood-clot nor pus was discovered, and the dura was therefore stitched together, a tube being left in the cerebrum. The tube was withdrawn in a week. The boy regained his normal senses and returned home on June the 4th, 1908, having still some spasticity and weakness of the left side.

Renal Calculus.—Mr. Victor Milward also showed a girl, aged 8½ years, upon whom nephrolithotomy had been performed. The cause of the urinary symptoms would have been impossible to verify without the help of the X rays. By them it was shown to be a single calculus and situated in the right kidney.

Nine Cases of Intussusception.—Mr. Milward showed cases 5, 7, 8, 9, and 10 out of the following table:

No.	Sex.	Age.	Date of operation.	Duration of symptoms	Variety.	Length of stay in hospital.	Result.	Remarks.
1	Male	6½	Oct. 4, 1904	30 hrs.	Ileo-cæcal	16 days	C.	—
2*	—	—	—	—	—	—	—	—
3	Male	$\frac{7}{12}$	June 5, 1905	5 hrs.	Ileo-colic	21 days	C.	Died 2 months later of marasmus.
4	Female	$\frac{6}{12}$	June 16, 1905	48 hrs.	,,	12 hrs.	D.	—
5	,,	$\frac{9}{12}$	Aug. 3, 1905	12 hrs.	Ileo-cæcal	11 days	C.	—
6	Male	$\frac{8}{12}$	Nov. 26, 1906	—	,,	16 days	C.	Died 3 months later; cause unknown.
7	,,	$\frac{7}{12}$	May 16, 1907	72 hrs.	,,	21 days	C.	—
8	,,	2	April 20, 1908	14 hrs.	Ileo-colic, becoming ileo-cæcal	21 days	C.	—
9	,,	2	May 19, 1908	3 hrs.	Ileo-cæcal	20 days	C.	—
10	,,	4	May 18, 1908	11 hrs.	,,	22 days	C.	—

2* Same as No. 1. A second operation was performed by Mr. Gamgee, August the 7th, 1905; the intussusception again recurred, and a third operation was performed by Mr. Milward, September the 25th, 1905. Result: D.

Patients, 9; number of operations, 10; operations successful, 8; cases died, 2.

Mentally Defective Children.—Dr. W. A. Potts showed nine cases of mentally defective children, which were classified as follows: (1) An extreme case of oxycephaly, or *tête à tour*. This case, in addition to great exaggeration of the vertical diameters of the head, showed marked asymmetry of the head and face. Neither of the ears had a scaphoid fossa or a lobule; the right showed a Darwinian tubercle; the left, which was much lower on the head than the right, had a defective helix. The mental power was not very bad, and improving. (2) A typical case of microcephaly associated with complete alopecia in a boy, aged 11 years. The largest circumference of the head was only 16¾ in. (3) A simple congenital case in a boy, aged 11 years. He was only 3 ft. 2 in. high, and showed little other abnormality. (4) A typical case of macrocephaly in a boy, aged 10 years. The mental power was very poor. The head, which was 22¾ in. in circumference, showed great enlargement, in contra-distinction to (5) a typical case of hydrocephaly with fair mental capacity. (6) and (7) Two Mongolians, one or other of which presented all the typical signs. One had a claw nail on the little finger of the right hand. (8) and (9) Two cretins, one or other of which presented most of the typical signs.

Deformity of the Hands in Four Generations.—Dr. James E. H. Sawyer showed a girl, aged 7 years, whose hands were deformed. All the phalangeal joints were slightly larger than normal, and the fingers could not be fully extended nor flexed so as to touch the palms. The fingers did not deviate to the ulnar side, as in rheumatoid arthritis. She had never had any pain in the hands, and all the other joints of the body appeared normal. The radiographs showed nothing abnormal. The hands of the child's mother were also in a similar condition. Two maternal aunts, one maternal uncle, the maternal grandmother and her father were all said to have had their hands affected in the same way.

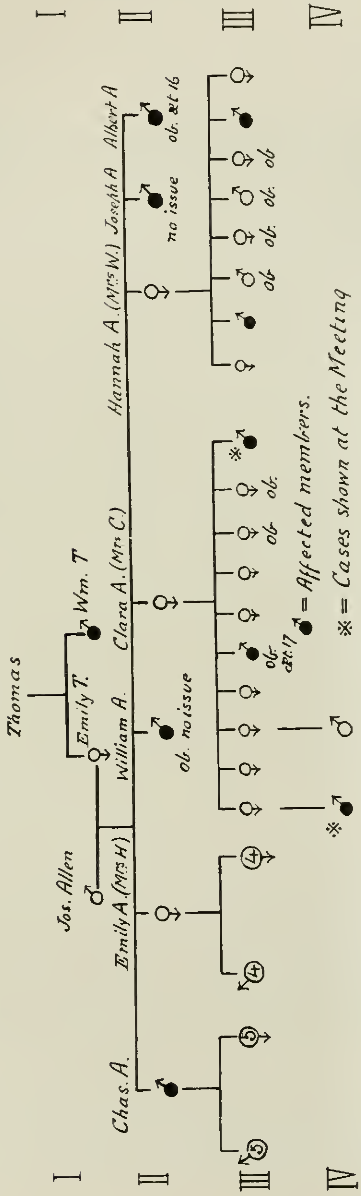
Pontine Tumour.—Dr. Stanley Barnes showed a boy, aged 6 years, suffering from a pontine tumour. The onset of the illness was with diplopia a few hours after an accident to the head. Other symptoms have been moderate headaches, mental deterioration, giddiness, and a rolling gait. He showed the following signs: Double sixth nuclear paralysis (complete on right, incomplete on left), right facial paralysis and commencing paralysis of the left side of the face, deafness on the right side but not on the left. No affection of the tongue, but the whole jaw was deflected to the right on opening it, owing to paralysis of the right motor fifth nerve. The corneal reflex on the right side was deficient. There was a considerable degree of left-sided spastic paralysis. The right arm showed intention tremor and was apparently also beginning to become spastic. The gait was ataxic, and he tended to fall chiefly to the right side.

Congenital Syphilis.—Mr. Billington showed a female infant, aged 15 months, who was suffering from congenital syphilis and exhibited to an extreme degree Parrot's nodes, the head being of the classical "hot cross bun" shape.

Congenital Aniridia.—Dr. Jameson Evans showed a female child, aged 2 years, suffering from congenital aniridia in each eye. There was no history of a previous case of a similar nature in the family. A very narrow rim of iris could be seen in some parts of the circumference of the pupils, but the edge of the lens and the suspensory ligament were everywhere visible. In the left eye there was a very small anterior polar cataract, and a more extensive posterior polar cataract. The eyes were otherwise healthy.

Hereditary Atrophy of the Optic Nerves.—Dr. Jameson Evans also showed a boy, aged 15 years, who was suffering from hereditary atrophy of the optic nerves. Two uncles of the patient were similarly affected. The first symptoms appeared about five years ago, and the disease had not varied to any appreciable extent during the last three years. His sight was barely $\frac{6}{60}$ in each eye.

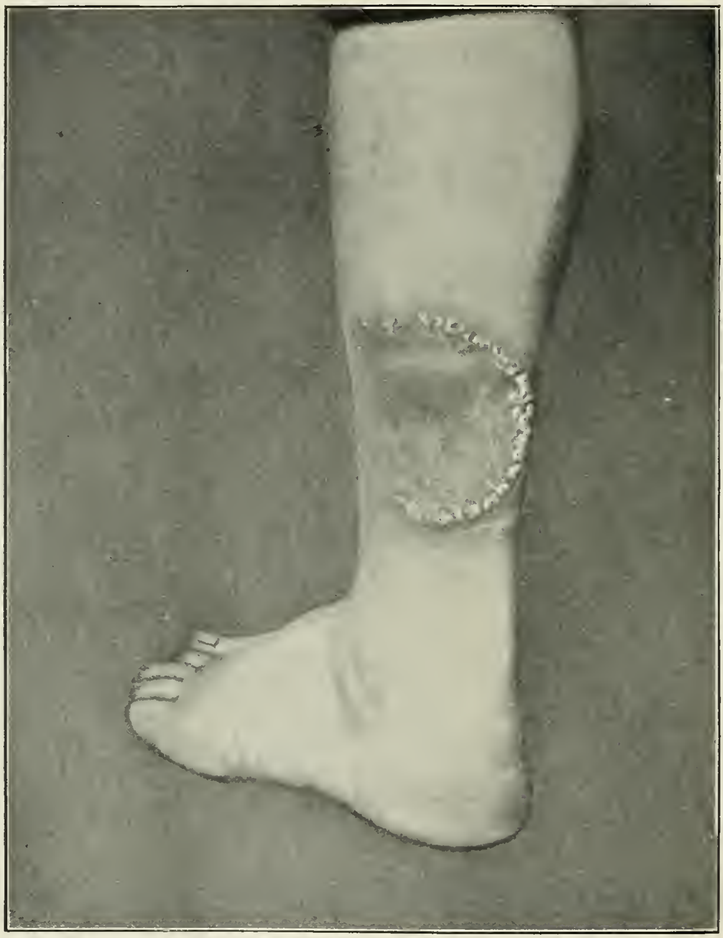
Cases of Hereditary Nystagmus.—Dr. Jameson Evans also showed a boy, aged 10 years, and a baby, aged 2 years, uncle and nephew respectively, who suffered from hereditary nystagmus. The affection could be traced through four generations. It was always transmitted through the females, whom it never affected. The nystagmus was of a slow lateral type with a slight amount of rotation.



Genealogical tree illustrating Dr. Jameson Evans' Cases of Hereditary Nystagmus. Large circles with figures enclosed indicate collective number of children of each sex. Those marked ob. died at an early age except where marked.

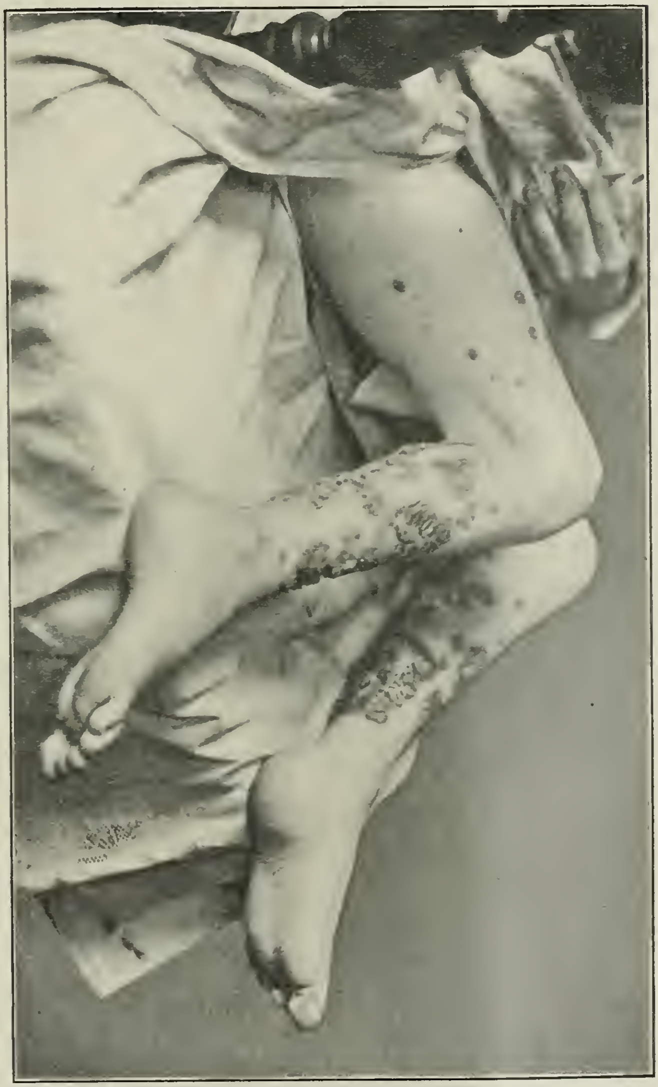
Bazin's Disease.—Dr. Douglas Heath showed a boy, aged 9 years, suffering from Bazin's disease (erythema induratum). The eruption had started two years ago on both legs.

Tuberculosis of the Skin.—Dr. Douglas Heath also showed a boy, aged 8 years, suffering from tuberculosis of the skin. The eruption began three months previously with two large papule-like lesions on the left arm, which rapidly broke down and suppurated. A larger focus of disease had appeared on the outer side of the left leg. The two smaller areas on the arm rapidly healed, leaving almost imperceptible scars. On the left leg a small ulcer appeared, which also rapidly healed, but an infiltration of the skin around went on taking place until a large area of skin, 3½ in. by 2½ in., was affected.



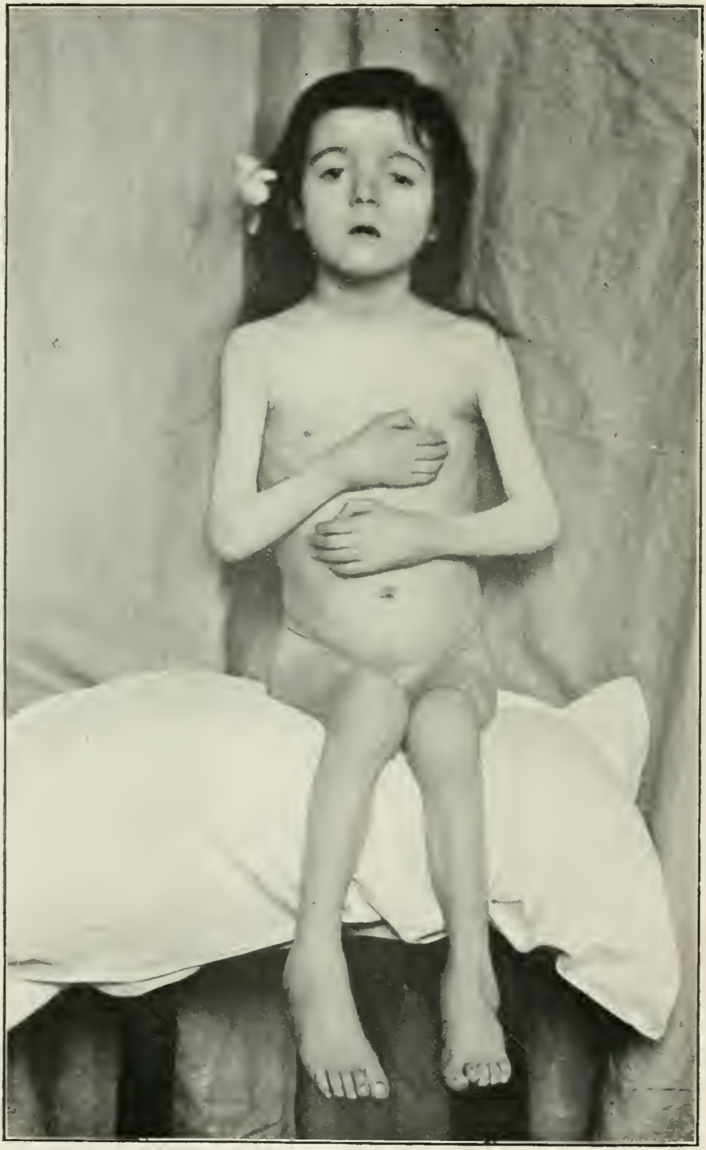
Granuloma Pyogenicum.—Dr. Douglas Heath also showed a girl, aged 12 years, who had a small wart on the scalp. About six months previously a red, raspberry-like humour had appeared on the wart, and was raised about half an inch above its level. It bled profusely when touched, and discharged a thick yellow pus from which the *Staphylococcus aureus* was cultivated.

Bromide Eruptions.—Dr. Douglas Heath also showed two children, aged 6 years, and 11 months, who were suffering from granulomatous eruptions from the taking of bromides.



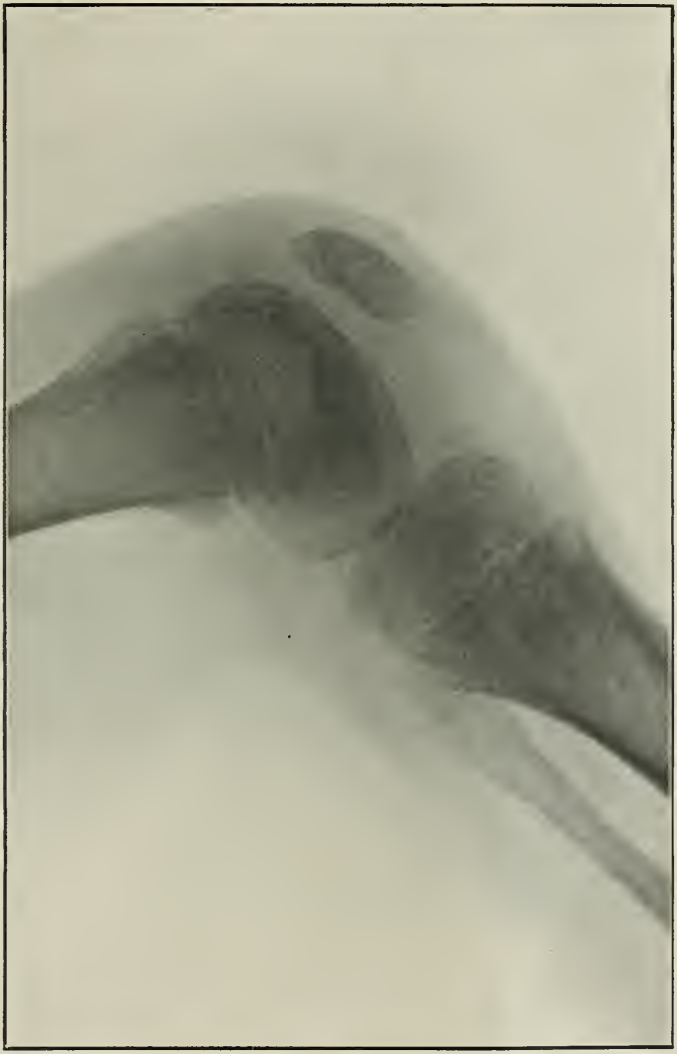
A Rare Form of Lupus.—Dr. Douglas Heath also showed a boy, aged

10 years, suffering from lupus. On the back of the middle of the right thigh there was a large horse-shoe-shaped patch of eruption $3\frac{1}{2}$ inches long and 3 inches wide.



Illustrating Dr. N. C. Penrose's Case of Rheumatoid Arthritis.

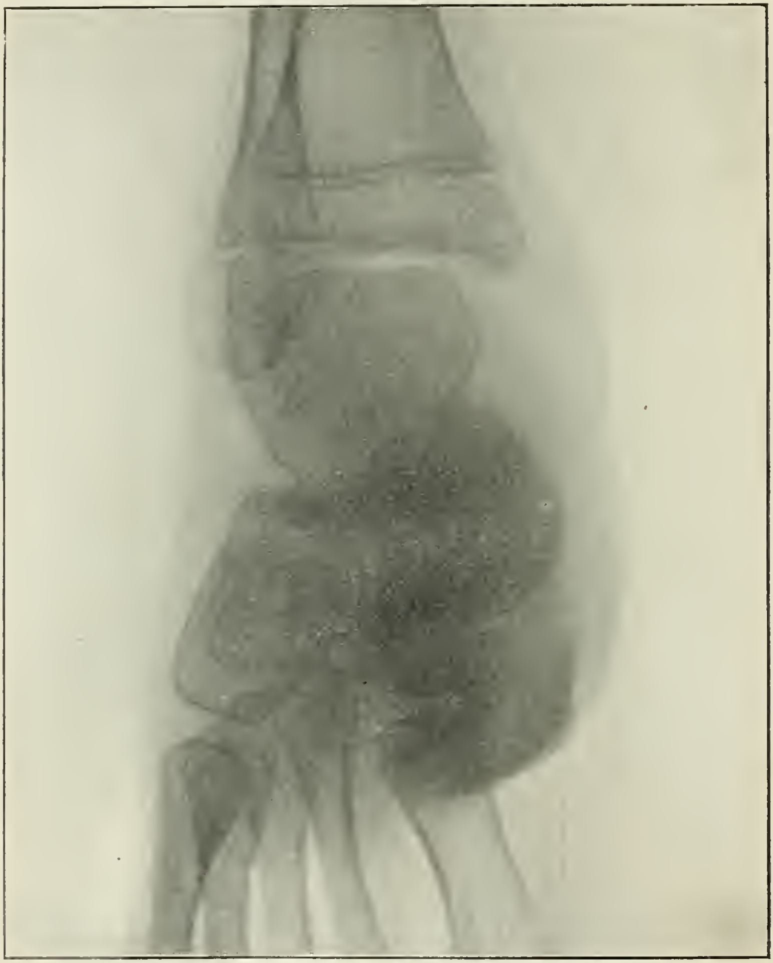
Congenital Syphilis—Circinate Eruption.—Dr. Douglas Heath also showed a male infant, aged 9 months, suffering from a circinate eruption which started when the child was eleven weeks old. The eruption consisted of numerous circles and segments of circles, freely scattered over the buttocks, thighs, legs, and arms. They were of a faint pink colour, flat topped, and varied from $\frac{1}{8}$th to $\frac{1}{4}$th of an inch in width. Some of the larger rings had a diameter of 2 inches or more.



Illustrating Dr. N. C. Penrose's Case of Rheumatoid Arthritis.

Congenital Syphilis.—Dr. Douglas Stanley showed a child, aged 5 years, the subject of congenital syphilis. There was extensive osteitis of the tibiæ, of the bones of each forearm, and to a slight extent of one femur. The child had been admitted into the Children's Hospital, Birmingham, for chronic nephritis, which improved under treatment.

Spasmodic Asthma.—Dr. Douglas Stanley also showed a girl, aged 13 years, who had been under observation since the age of 5 years for spasmodic asthma. The attacks were both diurnal and nocturnal, and the drug which had the most rapid and satisfactory effect was Grindelia robusta in 15-minim doses of the liquid extract, given every fifteen minutes for three or four times during an attack.

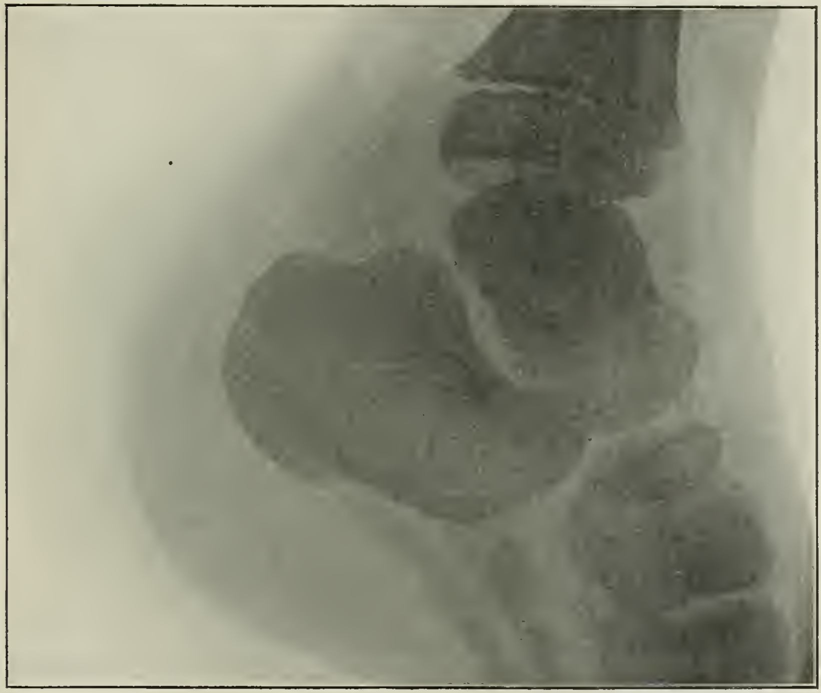


Illustrating Dr. N. C. Penrose's Case of Rheumatoid Arthritis.

Rheumatoid Arthritis.—Dr. N. C. Penrose showed a case of rheumatoid arthritis in a girl, aged 7 years. The elbows, wrists, knees, and ankles presented marked fibrous and bony peri-articular thickening. There was a teno-synovitis at the back of each wrist and hand. Both upper and lower limbs showed a large amount of wasting of the muscles. There was moderate enlargement of the spleen, and of the sterno-mastoid, supraclavicular, and axillary glands on each side.

SPECIMENS.

General Hydrocephalus.—Dr. Stanley Barnes showed the brain of a child, aged 3 years, who had been hydrocephalic from birth. All the ventricles were enormously distended, the foramen of Monro being very large. The condition was apparently due to adhesions between the medulla and the cerebellum, which had blocked the foramen of Magendie. There was no spina bifida.



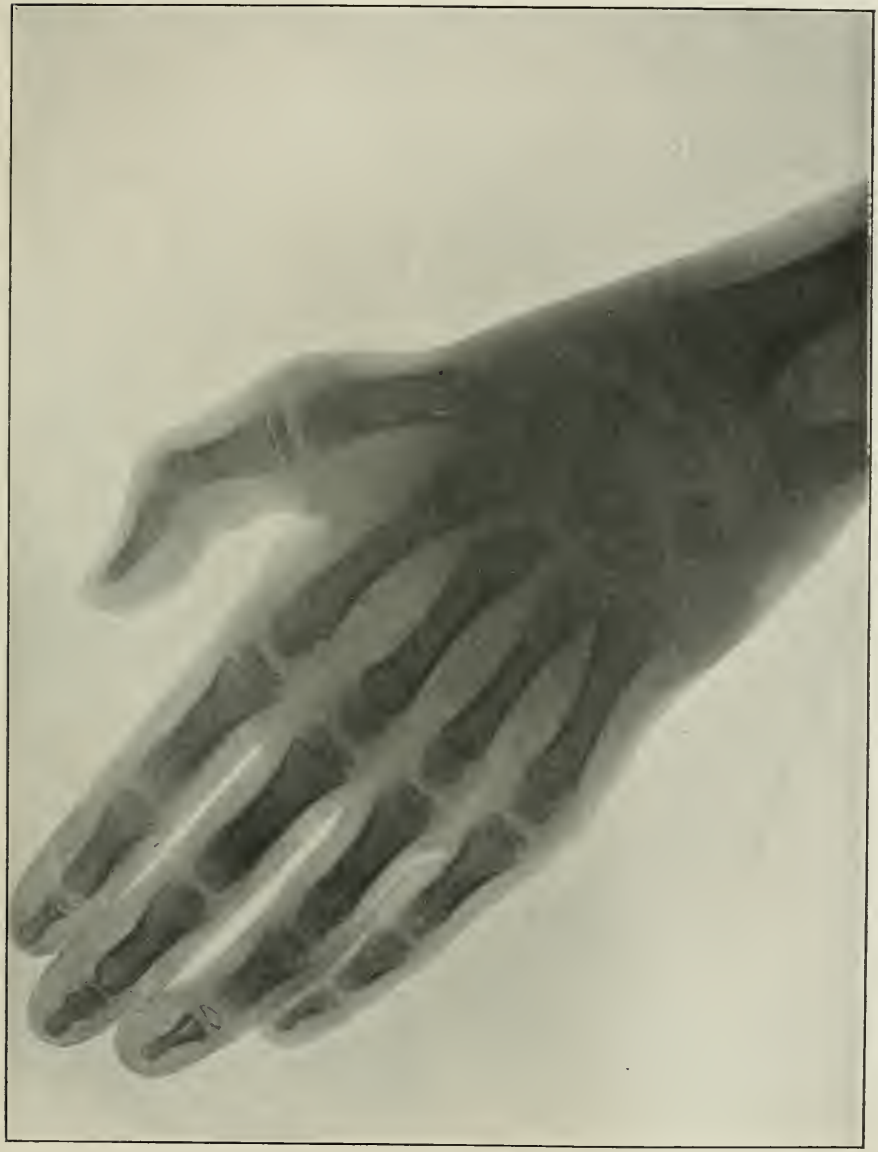
Illustrating Dr. N. C. Penrose's Case of Rheumatoid Arthritis.

Tuberculous Tumour of the Pons Varolii.—Dr. Stanley Barnes also showed this specimen. A large tuberculous mass was seen to have involved the pons and the adjacent part of the mesencephalon. A section of the tumour showed very large giant-cell formation.

Glioma of the Cerebellum.—Dr. Stanley Barnes also showed the brain of a boy, aged 7 years, who came up to the General Hospital with symptoms typical of cerebellar growth. An attempt was made to remove the growth, but the tumour was not found and the boy died two months later. The hernia at the site of the operation was entirely occupied by glioma, which at the time of death had spread upwards so as to block the aqueductus Sylvii and to give rise to a series of metastases in the lateral ventricles by "infecting" the cerebro-spinal fluid.

Illustrating Dr. N. C. Penrose's Case of Rheumatoid Arthritis.

Tuberculous Tumour of the Cerebellum, with Terminal Meningitis.—Dr. Stanley Barnes took this specimen from a child, aged 6 years. The patient had been admitted into hospital with symptoms of meningitis, but had had headaches and vomiting for some six weeks before. Well-marked optic neuritis was present. The granuloma was about the size of a hazel-nut. There was a tuberculous meningitis, which was chiefly basal and apparently due to direct infection of the meninges from the "tumour."



Illustrating Dr. N. C. Penrose's Case of Rheumatoid Arthritis.

Specimens of Terminal Rheumatic Infection.—Dr. W. H. Wynn showed organs from several cases of terminal rheumatic infection in children.

The patients had suffered several times from acute rheumatism in its various manifestations, and died from a general rheumatic infection involving the endocardium, myocardium, pericardium, pleuræ, and lungs. In one case there was a meningitis and in another peritonitis. The so-called "*Diplococcus rheumaticus*" was isolated from the blood in some of the cases during life, and in all from the heart's blood after death and also from the patches of broncho-pneumonia.

Status Lymphaticus.—Dr. W. H. Wynn exhibited specimens of the organs from several cases of status lymphaticus. Microscopic sections and micro-photographs were shown to illustrate the changes in the thyroid gland which are constantly found in these cases. These changes consist in a marked hyperplasia of the thyroid cells together with a diminution or disappearance of the colloid substance.

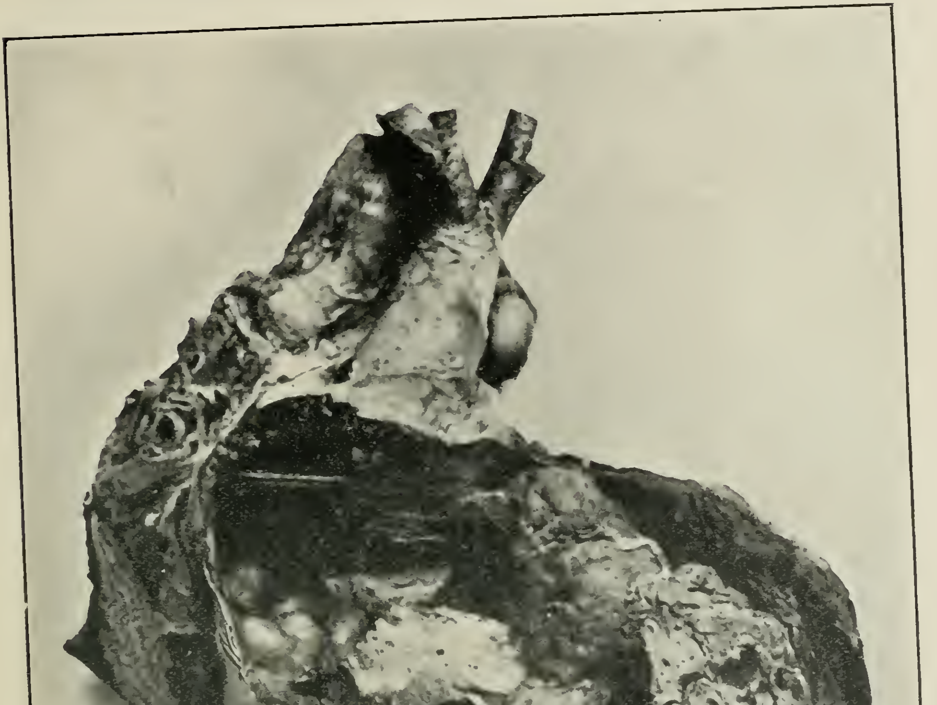
Glioma of the Retina.—Dr. Beatson Hird showed macroscopic and microscopic specimens of glioma retinæ taken from a child, aged 1 year and 9 months. The specimen showed the condition in Stage 2 with secondary glaucoma. There was marked ciliary staphyloma and also staphyloma at the posterior pole. The globe was much distended, the antero-posterior diameter being as much as 33 millimetres. The growth had extended beneath the choroid posteriorly, but not into the nerve. The retina was detached.

Osteo-sarcoma of the Heart.—Dr. James E. H. Sawyer showed the heart of a girl, aged 16 years, containing secondary deposits of osteo-sarcoma. The patient had had her left leg amputated three months previously for an osteo-sarcoma of the lower end of the femur. The secondary growths were only in the right side of the heart, and projected into the cavities of the auricle and ventricle in a pedunculated manner. To open the right ventricle it had been necessary to saw through its wall. The growth was about an inch thick in the ventricular walls. A microscopical examination of the secondary deposits showed them to be typical examples of an osteo-sarcoma, and in all of them the osteoid change was very far advanced.

Chronic Interstitial Nephritis.—Dr. James E. H. Sawyer also showed microscopic slides and photographs of granular kidneys in three children, aged 4, 8, and 14 years.

Glioma and Pseudo-glioma.—Dr. Jameson Evans showed gross sections of eyes removed for glioma and pseudo-glioma, and microscopic sections of the giloma. The pseudo-glioma had been removed from a boy, aged 3 years, whose father and mother were tuberculous. The child's other eye showed extensive pearly-white degeneration spots in the choroid at the posterior pole. The excised eye showed a complete detachment of the retina. The subretinal fluid was albuminous and contained cholesterin, and was very turbid in the neighbourhood of the choroid. The latter was completely atrophied anteriorly. The exact nature of the disease had not been decided. The exhibitor was convinced that this was a case of tuberculous choroiditis, but he had not been able to prove it by means of microscopic sections.

Cerebral Venous Thrombosis.—Dr. Douglas Stanley showed the brain of a child who died from intense anæmia. Previous to death the



Illustrating Dr. James E. H. Sawyer's Case of Osteo-sarcoma of the Heart. Secondary osteo-sarcoma in the walls of the right ventricle and auricle.

patient showed irregular paralysis on each side, and finally passed into coma. At the post-mortem there was found to be marked venous thrombosis over the vertex of the hemispheres, and the brain tissue was soft and red coloured.

Hydrocephalus under Treatment by Repeated Lumbar Puncture.—Dr. Walter Jordan showed a child suffering from marked hydrocephalus. When admitted into hospital there was head-retraction, aching of the spine, rigidity of the limbs, fretfulness, and inability to swallow. Lumbar puncture relieved these symptoms, and when they reappeared the punctures were again performed. Up to the present there had been eight lumbar punctures, 3 to 6 oz. being withdrawn at a time. The circumference of the head had varied from 20 in. before puncture to 18¾ in. after. After the fifth and succeeding punctures a marked change in the external appearance of the head took place, but the improvement in the symptoms was of shorter duration than after the first four punctures, which had little effect on the external appearance.

Congenital Palmar Xerodermia.—Dr. Walter Jordan also showed a girl, aged 7 years, and her brother, aged 3 years, with marked thickening of the cuticle of the palms. It was first detected by the mother at the age of three months in each case. The father and paternal grandfather also had it.

Hypertrophy of one Arm and the Opposite Leg.—Dr. Walter Jordan also showed a girl, aged 6 years, who had a very considerable amount of hypertrophy of the left upper limb, especially of the hand, and of the right lower limb, but scarcely affecting the foot. The right half of the vulva was also affected. The hypertrophy was of the subcutaneous tissue. The condition has been present since birth.

Congenital Obliteration of the Common Bile-Duct.—Dr. James Miller showed a specimen of congenital obliteration of the common bile-duct, with monolobular cirrhosis of the liver, which were found in a child who died at the age of three months. The common bile-duct was completely obliterated in its lower portion close to the duodenal opening. There were no inflammatory adhesions or thickening around the obliterated portion.

Bronchiolectasis in Children.—A number of microscopic sections of the lungs were shown by Dr. James Miller from a series of cases of broncho-pneumonia in children. The sections showed all stages of dilatation of the bronchioles, from a condition not visible to the naked eye up to the so-called "honeycomb" lung. The specimens demonstrated that in a large proportion of the cases of broncho-pneumonia there occurs a dilatation of the air-passages which are unsupported by cartilage, *i.e.* the bronchioles; that this dilatation is primarily due to a stretching of the elastic and muscular layers of these tubes, due to inflammatory infiltration of the walls and doubtless assisted by the act of coughing; that this stretching may go on to actual rupture of the laminæ, when large cavities develop filled with purulent exudate. The reason for such bronchiolectasis not being observed in lobar pneumonia is probably because in the latter condition the smaller air-tubes are supported by the surrounding consolidated lung, whereas in lobular pneumonia this is not the case to the same extent.

Acute Tuberculous Cerebro-spinal Meningitis.—Dr. James Miller showed a number of naked-eye and microscopic preparations illustrating a series of five cases of acute tuberculous cerebro-spinal meningitis in young children with a duration of two to seven days. In no case were the symptoms typical of tuberculous meningitis, and in more than one a diagnosis was made of acute meningococcal meningitis. Tubercle bacilli were found in all five cases.

Abstracts from Current Literature.

Medicine.

The diagnostic importance of the presence of Koch's bacillus in the fæces of children suffering from pulmonary tubercle ('*La Pediatria,*' *December*, 1907, *p.* 881).—**N. Serio-basile** undertook some researches on this subject with the following results from eighteen cases. Provided the technical difficulties can be eliminated, and other causes of error due to the morphological variability of Koch's bacillus, and the numerous forms of acid-resisting bacilli which resemble it, a search for tubercular bacilli in the fæces gives positive results. Koch's bacillus can traverse the whole digestive track and may be met with in the fæces without having undergone any visible alteration in morphological properties or power of colourability. They are more constant and numerous when they come from lesions of the intestinal mucous membrane, but are much fewer when due to lesions of the respiratory apparatus only. The bacillus may be absent from the fæces of children who swallow their sputum, notwithstanding the presence of marked pulmonary lesions. This method may have an important diagnostic value in positive cases, but when negative it does not exclude even the severest forms of pulmonary tubercle in children.

Vincent Dickinson.

False constipation in nurslings ('*La Clin. Infant.,*' *February*, 1908, *p.* 79).—**Lassablière** observes that while true constipation, with increased consistency of fæces and delay in their expulsion, is not rare in different conditions, there is another functional intestinal disorder, often called constipation, although the fæces are normal in colour and consistence. In the majority of these cases we have to deal with a well-nourished infant at the breast, who gains weight regularly and sleeps well, has an excellent appetite and does not vomit. Instead, however, of three stools daily, spontaneous and of the colour of yolk of egg, the large intestine remains inactive. It is enough to stimulate the rectal mucous membrane with a glycerine suppository to occasion an evacuation of yellow material, not formed, nor hard, but of the consistence of varnish, not copious but perfectly homogeneous. These are not the characteristics of true constipation met with in infants brought up on milk sterilised by excess of heat, or even sometimes at the breast. The exact interpretation of this condition is not easy; it evidently does not depend on disordered digestion, as is proved by the healthy condition of the stools and the increase of body-weight. One hypothesis is that the amount of food given is too small for the amount of work, in conjunction with an unusually perfect assimilation. Some confirmation of this is found in the fact that the mothers of breast-fed infants suffering from false constipations often have insufficient milk, and Variot mentions that when infants are over-fed they have often too frequent stools. The practical point is that, given a good nurse, purgatives and injections should not be used, but the stools mechanically induced by small suppositories.

VINCENT DICKINSON.

Second attacks of measles (*'El Siglo Médico,' November* 16, 1907, *p.* 722).—**G. Alvarez**, in thirty-two years' practice of pædiatry, had seen many second attacks of measles, but in his previous experience there had always been at least a month's interval between the two attacks. In the present paper he records three cases which he had seen during 1907 in which the interval between the attacks was eight, nine, and ten days respectively. He also states that in the same year he had seen other cases in which the interval had been fifteen or seventeen days. He attributes the occurrence of second attacks to a defective and short-lived immunity and to a fresh exogenous infection.

J. D. ROLLESTON.

Surgery.

Chancre of tongue following tooth extraction (*'Rev. de Laryng.,'* 1908, *p.* 248).—**Decréquy** records the case of a boy, aged 8 years, who, three weeks after the extraction of the lower second right milk molar, developed an ulcer on the right side of the tongue presenting all the characteristics of a hard chancre. The diagnosis was confirmed by the evolution of the lesion and the appearance of a roseola.

J. D. ROLLESTON.

Chancre of penis in a boy, aged 9 years (*'Post-graduate,' March*, 1908, *p.* 200).—**W. Gottheil.**—The lesion in this case was due to buccal coitus with a boy of the same age who was suffering from secondary lesions of the mouth and pharynx. The case well illustrates the physical and moral possibilities among the tenement-house population of large cities (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1907, p. 360).

J. D. ROLLESTON.

The treatment of inguinal hernia in children (*'Lancet,' May* 2, 1908). —**C. H. Fagge** considers that the following are absolute indications for operation: (1) Herniæ which cannot be kept up by trusses or which are painful when a truss is worn; (2) large scrotal herniæ which have stretched the inguinal canal considerably, and therefore render trusses necessary throughout life; (3) the association of an undescended testicle with an inguinal hernia; (4) a hernia which has been irreducible on a previous occasion. Although some period after the first dentition is probably the ideal date at which to undertake a radical cure there is no disadvantage in doing it much earlier. Of his own cases the youngest operated on was one month, and fifteen were operated on in the first six months. By operating in childhood we can insure a more certain result, as at this date those secondary changes in the neck of the sac and in the posterior wall of the inguinal canal which take place at a later date have not occurred. In private practice it is unnecessary to wean an infant; but when this is unavoidable, as it is in hospital cases, it is well to allow two or three weeks to elapse before the operation so that the child may become used to the new diet, as intestinal troubles will seriously jeopardise the life of an infant after this as after any operation.

JAMES BURNET.

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Original Articles.

PEMPHIGUS ACUTUS CONTAGIOSUS OCCURRING IN FEBRILE DISEASES.

By Carl Leiner,
Vienna.

There has been till now no uniform interpretation of the peculiar skin disease known as pemphigus. Two forms of this disease are to be distinguished, the pemphigus vulgaris chronicus and the pemphigus acutus.

The common symptom in both forms of the disease is a bullous eruption on different parts of the body, but ætiologically and clinically they are widely different, because in contradiction to skin diseases in general the pemphigus vulgaris affects the entire constitution and general state of health of the patient. The bullous eruption continues for some months, not seldom for years, and is almost always accompanied by fever, sleeplessness, itching, want of appetite and a general state of debility. In many cases not only is the skin affected but also the mucous membranes. Although it sometimes happens that after long and careful treatment the patient entirely recovers from the illness, many succumb to it either from cachexia or owing to complications such as pneumonia, nephritis, or sepsis, to which sufferers from pemphigus vulgaris are peculiarly liable. The pemphigus vulgaris, as a rule, only attacks adults, seldom children; no case is known till now of it having attacked sucklings.

The ætiology is still unexplained; it may be probably due to neuropathic disturbance.

According to many authorities there are two special forms of the pemphigus acutus: the pemphigus contagiosus neonatorum and the true pemphigus acutus.

There are, of course, other bullous diseases, viz. pemphigus syphiliticus and the epidermolysis bullosa hereditaria, but these will not be dealt with in the present paper; as they are outside the scope of the present contribution.

The clinical picture of pemphigus contagiosus neonatorum is well known, and, moreover, has for many years been ætiologically clear.

The disease begins with the eruption of bullæ, generally during the first weeks of life. The eruption favours the neck, face, and abdomen, but may also appear on other parts of the body. The single vesicles vary in size, and are usually rounded and enclosed by a narrow red zone. The contents may be clear or cloudy. The small vesicles sometimes coalesce and form very large bullæ, or they may spread further into the circumference and gradually increase in size. Pemphigus neonatorum ends usually in recovery, but sometimes, when the eruption spreads over the whole body, it causes death.

Bloch speaks in such cases of a pemphigus acutus neonatorum malignus. These cases show a great resemblance to another disease in newly-born children, viz. "dermatitis exfoliativa," first described by *Ritter* in the year 1878. Ritter observed during a period of ten years (1868–1879) not less than 279 cases, and has given an excellent description of the disease. The illness begins generally in the first week of life—never later than the fifth—with a redness round the mouth, which in a few days spreads all over the body. After the erythematous stage the stage of desquamation appears, which is characteristic of the disease and consists of a detachment and maceration of the entire epidermis, so that the children present the appearance of having been scalded. At this period the sufferers often succumb to the complaint with the symptoms of a general collapse accompanied by diarrhœa. In favourable cases the recovery is very slow, the skin becomes very dry and is covered with numerous scales, and only gradually assumes a normal form, the stadium exsiccationis and regenerationis.

Ritter considered this dermatitis as the consequence of a septic infection. We know now that this opinion was not correct, and that the dermatitis is only the highest degree of pemphigus contagiosus neonatorum.

Knöpflmacher and the present writer have sufficiently proved this in their writings, and other authors, among them *Hedinger,* have confirmed it. Considering that in one and the same epidemic cases of pemphigus neonatorum and cases of dermatitis exfoliativa are to be seen, that cases of pemphigus may resolve into dermatitis Ritter, and that the bacteriological and histological states in both diseases are the same, the obvious conclusion is that the dermatitis is only a severe form of pemphigus neonatorum. Both the benign and malign forms of pemphigus are caused by the *Staphylococcus aureus.* The infection with that micro-organism takes place from the skin.

The observations by many medical men that in epidemics of pemphigus neonatorum adults also are sometimes attacked by the disease led to the right understanding of it. But as far back as the year 1890 *Faber* showed that in cases where adults are infected with pemphigus vesicles do not always appear as in children, but in their place there are efflorescences quite similar to those of impetigo contagiosa.

This disease, which was first described by *Tilbury Fox,* 1864, is characterised by the formation of discrete vesicles and pustules. But they soon lose this form ; the thin epidermis becomes ruptured and now thick yellow characteristic crusts appear.

After the crust falls off a small red patch remains, sometimes for some weeks, and this finally disappears without leaving either scar or discoloration on the skin. Instead of the small vesicles or pustules larger bullæ may appear; at first these are filled with transparent serum, which later becomes opaque. Cases of the disease are usually seen in groups affecting several children in one family or in one school. It may be communicated from one child to another and spread by auto-inoculation from one part of the body to another. The examination of the contents of the vesicles or pustules has uniformly yielded the *Staphylococcus pyogenes aureus.*

Matzenauer has proved in his paper that it is not possible to separate pemphigus neonatorum from impetigo contagiosa.

It has often been observed that pemphigus neonatorum communicated to an adult takes the form of impetigo contagiosa, and inversely that impetigo contagiosa communicated to a newly-born infant takes the form of pemphigus. It depends on the different quality of the skin at the different ages. The clinical, bacteriological, and histological states are the same in pemphigus neonatorum and impetigo contagiosa. Facts such as these speak for a like causation for both diseases.

The real pemphigus acutus has always been differentiated from pemphigus neonatorum.

This acute pemphigus is characterised by the eruption of bullæ on different parts of the body, very often over the whole body, and by fever. The eruption lasts from two to four weeks, and is always accompanied by fever. This disease often ends fatally. The ætiology is unknown. Many medical men have compared pemphigus acutus to the acute exanthemata such as measles, scarlet fever, etc. The number of the cases ranged in this group is very large. Every bullous eruption in the course of a febrile disease, such as pneumonia, measles, scarlatina and bullous eruptions after injury to the skin, have been described by many authorities as acute pemphigus. My experience leads me to the conclusion that bullous eruption in the course of febrile diseases is neither an acute pemphigus nor a symptomatic pemphigus due to the same bacillus as the primary disease, but only to the bullous form of impetigo contagiosa. In the 'Jahrbuch für Kinderheilkunde,' vol. lv, I have published my observations on the so-called pemphigus acutus in measles.

A child of twenty-two months suffering from measles showed during the period of desquamation small vesicles on different parts of the body, on the trunk and round the umbilicus. The eruption was unaccompanied by fever. In the course of several days the vesicles became larger and filled with sero-pus. Some of the bullæ burst and formed impetiginous crusts, surrounded by an inflammatory areola. They healed on becoming dry, and the crusts fell off, leaving a small red patch. The eruption lasted one week.

In the same special ward with this little patient were four other children all suffering from measles. Three of them showed similar bullous eruptions, which took the same course as on the first-mentioned child.

Here we have a disease, which is auto-inoculable, contagious for other persons, and which occurs without fever. It is characterised by the eruption of bullæ, the formation of crusts and healing without scars.

I have had several opportunities of observing the same form of pemphigus contagiosus eruption just described in measles in the course of *pneumonia* in children in the first years of life. Many medical writers have written of an acute pemphigus or of a symptomatic pemphigus in such cases. I can prove from my cases of pemphigus eruption in pneumonia that these are only *bullous forms of impetigo contagiosa.*

Firstly, I have observed that the pemphigus eruption heals quickly, while on the other hand the pneumonia, with all its severe symptoms, takes a long time. Secondly, I have seen sometimes an infection of this pemphigus arising in other children or in adults who have been in contact with the patients. These infected persons always showed the typical impetigo efflorescences. Thirdly, bacteriological examinations in all these cases gave the same result. In the bullæ the *Staphylococcus pyogenes aureus* could always be demonstrated, while in cases which came under post-mortem the bacteriological examination of the pneumonia gave different results. Sometimes the diplococcus was found alone, in other cases of pneumonia lobularis the diplococcus occurred together with other micro-organisms—viz. with staphylococcus or streptococcus with the *Bacillus influenzæ.* In not one case which came under post-mortem could I find septic symptoms or disturbances in the organs, which were typical of a general infection with the staphylococcus.

Also the case which is described by *Crary* as one of acute septic pemphigus is not convincing.

Crary observed on a child of a few days old an infection of the umbilical vessels and an eruption of bullæ on the body, which he took to be a symptom of septic infection. He found in the arteria hypogastrica the primary seat of the infection, the *Staphylococcus aureus* and *albus,* the same micro-organism in the liver and spleen, and in the blood the *Staphylococcus aureus* alone.

Crary did not make a bacteriological examination of the bullæ during the child's life, but he found in the histological sections diplococci. It is more than probable that these diplococci in sections in cultures would have turned out to be *Staphylococcus aureus.* Despite this, Crary's conclusion is not quite plausible, for his case did not show other symptoms of general infection with *Staphylococcus aureus,* or the formation of the typical abscesses in the kidneys or the characteristic lobular pneumonia with central necrosis in the lungs.

Leaving these reflections out of the question it must be noticed in the case of Crary that the septic infection only occurred as a bullous eruption of the skin and not as is the rule as a polymorphous erythema. At this point I must not forget to mention that according to my experience septic polymorphous erythemata are not seldom to be found in the course of different septic infectious diseases. I have observed these cutaneous manifestations in many cases of the almost always fatal form of septic diphtheria, in some cases of infection of the umbilical vessels in newly-born children, often in the course of angina, and in a case of inflammation of the pharyngeal glands. I have never observed a septic dermatitis consisting of a bullous eruption alone. But I will not deny the existence of bullous septic erythema, although it is quite certain that bullous dermatitis is very, very rare in comparison with the erythematous forms.

Some medical men avoid the diagnosis pemphigus acutus and prefer the diagnosis "*febris bullosa.*" One of these authorities is *Köhler*. He describes some cases of febris bullosa which belong together and which I will describe shortly. Köhler observed a child of six months old, whose illness commenced with fever. One day later a bullous eruption appeared on different parts of the body, especially on the face and trunk. After seven days the illness ended fatally. The fever lasted the whole time. Besides the skin symptoms the child showed only slight signs of lung affection. It would have been of the greatest interest to have had an exact description of the autopsy, but Köhler mentions only shortly that the post-mortem gave a negative result.

I have sometimes had the opportunity to observe children during their first six months suffering from pemphigus contagiosus, accompanied by fever. But the fever was not caused by the pemphigus, because I found an inflammation of the middle ear to account for it, and after that had healed the fever ceased. The pemphigus was only an accidental association and had nothing to do with the fever and the inflammation of the middle ear. It is a pity that in Köhler's case the ear was not examined. Köhler found in the contents of the bullæ the *Staphylococcus aureus* and a diplococcus similar to the *Gonococcus Neisser*.

Köhler made a vaccination with the contents of a pemphigus bulla on his own arm, which resulted in the formation of a bulla. It is interesting to hear that also two nurses, who had the care of the child and the washing of their linen, were attacked by the disease. They contracted a bullous eruption on the face and on the arms; these eruptions were accompanied by fever, headache, and vomiting. Also the foster-mother and her child showed bullæ on the face. On the basis of these observations Köhler came to the conclusion, that the "febris bullosa" is a contagious disease accompanied by fever and other symptoms to which children and also adults are liable.

According to my opinion it is still doubtful if Köhler's diagnosis of "febris bullosa" is correct, and that it is identical with acute idiopathic pemphigus.

Proof against his view is the contagiousness of the disease, which can only be communicated from one person to another by direct contact.

This contagiousness is quite different from the contagiousness of the acute exanthemata, with which Köhler compares his "febris bullosa."

The acute exanthemata always show the character of an epidemic; they appear in different parts of the same town or country at the same time, so that we are obliged to speak of aërogenous infection, while in Köhler's cases only a contagiousness by direct communication has been proved. Especially characteristic is this quality of impetigo contagiosa, and as it is well known that impetigo contagiosa can also occur as a bullous eruption, Köhler's cases must be grouped under pemphigus contagiosus.

The appearance of fever in some of Köhler's cases causes some difficulty in diagnosing, because this is generally absent in cases of impetigo contagiosa. But it is known that severe cases of pemphigus contagiosus may be accompanied by fever, and, on the other hand, that fever may be produced by some other cause, the pemphigus being only an accidental state of a febrile disease, as I have already pointed out.

Those cases described by some few English medical men as pemphigus acutus are widely different from the same disease described by *Köbner*, 1869. The former observed an acute bullous eruption, especially on butchers or on persons handling animals or animal products. This infection is brought about through a wound and is probably due to a specific micro-organisms. In almost every case mentioned by these medical men the disease proved fatal. Cases described by *Pernet*, *Pernet and Bulloch*, and *Hadley and Bulloch* do not correspond to the acute pemphigus of *Köbner*, and must be placed in the group of septic infection due to wounds caused by the bones of dead animals.

So it is seen that bullous eruptions of the most varied ætiology must be placed in the group of the so-called pemphigus acutus. My own experience has led me to the conclusion that the bullous eruption described as pemphigus acutus on children can with confidence be placed in the group of "*Impetigo contagiosa bullosa.*" The truth of this assertion I have proved from my own observations in cases of pemphigus in the course of measles, pneumonia and otitis media.

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CASE OF TUBERCULOSIS OF THE BRAIN WITH COMPLETE PARALYSIS OF BOTH THIRD NERVES.

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AN infant girl, H. McK—, aged 11 months, was brought by her mother to the dispensary of the Royal Hospital for Sick Children, Glasgow, on March the 4th, 1908, on account of general debility and external strabismus of both eyes.

The mother was a delicate little woman suffering from phthisis pulmonalis. When aged 20 years she married a widower with several of a family. Their social condition was poor. Her first two pregnancies resulted in miscarriages, one at six months the other at eight months. The last was ascribed to a fall. The next three pregnancies resulted in the birth of children at full time, the patient being the youngest. In none of these children was there any evidence of congenital syphilis, though possibly the miscarriages indicated the presence of such a taint.

The patient, whose birth was natural in every way, was reared on the breast till eleven months of age. During the earlier months she was much troubled with sickness and vomiting. At eight months she had bronchitis. This continued for four weeks, and during this time the gastric symptoms were very much worse. After this she improved a little, but she never throve well, the frequent vomiting persisting till recently, when she was weaned. There was no history of otorrhœa. About a fortnight before coming to the dispensary the mother noticed squinting of the eyes, but she could give no details as to which eye was first affected, nor of the direction of the squint, though she thought it was outwards. When the child was first seen on March the 4th she was pale and puny and had slight external strabismus in both eyes, but there were no other definite cerebral symptoms present.

A week later nystagmus was detected and the eyelids had begun to droop. The latter condition interfered with the sight to some extent, otherwise there was no apparent defect of vision. The pupils were moderately dilated and did not respond much, if at all, to light.

On March the 12th the patient was referred to Dr. Rowan, ophthalmologist to the dispensary, who corroborated the presence of the complete ptosis of both eyes, most marked in the left, the nystagmus in both eyes, though it was not constantly present, and the external strabismus of both eyes, most marked in the left. This eye could not pass the middle line inwards. Dilatation of both pupils was also present. The left was a little larger than the right and about two thirds dilated. They responded little, if at all, to light, and this absence of the reflex was again most marked in the left. Ophthalmoscopic examination was impossible.

Later, on April the 23rd, Dr. Rowan saw the patient again, noted the facts indicated above as being still present with the exception that the external strabismus was now more marked in the right eye. A passing glance was also obtained of the fundus of the left eye, the veins of which were distended and the optic disc swollen—indicating the presence of neuritis. The right fundus could not be seen without putting the child under chloroform and this was not considered necessary. The child during the whole of this period, though quiet and placid, was little inclined to take food and manifestly failing in general health. The bowels were rather constipated in spite of half a grain of grey powder administered night and morning since March the 18th. There was no vomiting of any account, though possibly there was headache because she latterly developed a habit of hitting her head with her hand. The anterior fontanelle was present but not tense. Over it pulsation could be distinctly felt. There was no evidence of involvement of any other cranial nerves beyond the first and third. The hands, arms and legs, though taking part in the general enfeeblement, showed no distinct evidence of paralysis, flaccid or spastic. The child could use her hands apparently quite well and could put her feet to the ground. The knee-jerks were present on both sides; Kernig's sign was absent.

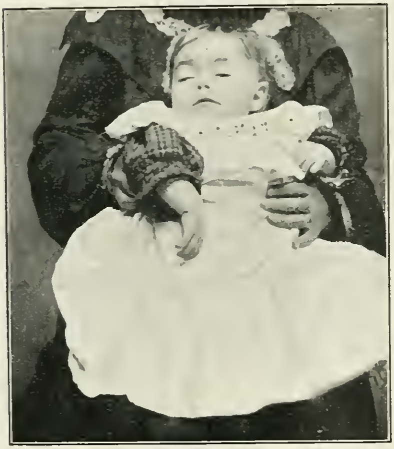

Fig. 1.—Double ptosis from involvement of the third nerves in tuberculous meningitis.

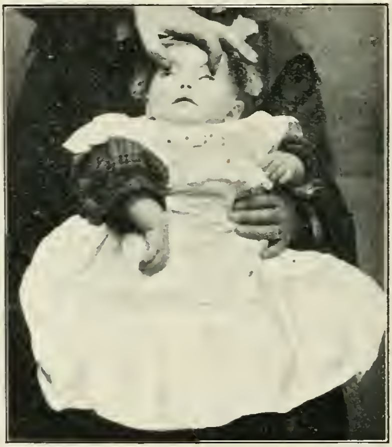

Fig. 2.—The same case, showing double external strabismus when the eyelids are raised.

On April the 29th it was noted that the child had for the past few days been disinclined for food, costive, feverish, and had some cough which sometimes ended with vomiting. The temperature was 99·4° F. and the examination of the lungs showed the presence of crepitant râles, especially over the right lung. The heart was normal. This condition, with the use of laxatives and a febrifuge mixture, gradually passed off.

On May the 2nd it was noticed that the nystagmus in both eyes was much less; also that the veins over both eyelids were much dilated, otherwise the symptoms remained the same. There was still no evidence of involvement of the legs and arms beyond what was ascribed to the general feebleness. The photographs from which the accompanying illustrations have been reproduced were taken on May the 9th. Fig. 1 shows the double ptosis; Fig. 2 shows the double external strabismus when the eyelids are raised.

After the lapse of a week the child again developed signs of pulmonary congestion accompanied by fever and cough, the latter being so persistent as often to end in vomiting. This condition, though the child was not seen by me again for some time, evidently persisted until June the 3rd, when the temperature was found to be 101° F., and the examination of the lungs showed the presence of a great deal of crepitant râles all over both lungs. She was then admitted to the hospital. Thereafter the temperature pursued a very irregular course, being always above 99° F., frequently as high as 101° F., and occasionally as high as 103° or 104 F°. The pulse and respirations were very rapid and variable in rate, the former numbering between 132 and 172 per minute, the latter between 32 and 72.

On two occasions—June the 6th and 13th—lumbar puncture was performed by Dr. Christie, house-physician. On the first occasion the fluid obtained was found to be clear. After prolonged centrifugalising a slight sediment was obtained. This was found to contain a few lymphocytes but no polymorphonuclear cells. No tubercle bacilli were found. The fluid obtained by the second puncture was examined by Dr. Ivy Mackenzie, but no positive report on the presence of tubercle bacilli was given, as only one doubtful organism was found.

During the time the patient was in the hospital the pulmonary condition never developed into anything severe. The signs rather diminished. On the morning of June the 13th, however, respirations became more difficult and grunting in character. At the same time twitchings of the right side of the face, chiefly about the eye, began. This was accompanied by twitchings of the right hand and arm. Thereafter the right leg became affected in the same way. Subsequently the convulsion became general. The right pupil became greatly dilated and fixed, and remained much larger than the left. The child meanwhile had gradually passed into a state of coma, in which state she remained until death, which took place at 6 p.m. on the same day.

General remarks.—This case from the first presented a very interesting group of ocular symptoms. These set in fairly suddenly, and one remarkable feature of the case was, that for the greater part of the time the child was under observation there were few other cerebral symptoms. It was only towards the close of the illness that these developed.

The ocular symptoms when fully developed were in the main the result of paralysis of both third nerves. The symptoms which would be thus accounted for were—the ptosis, the external strabismus, the dilatation of the pupils and the absence of the response to the stimulus of light. The optic neuritis and nystagmus were indicative of organic cerebral disease but were of little value as localising symptoms. Both symptoms are common in quite a large variety of cerebral lesions both focal and diffuse, especially in tumour and meningitis. The lesion which would affect both third nerves and produce the first group of symptoms would probably be so situated as to involve their nuclei; or the trunks of the nerves on the base of the brain. As to which would be present in a particular case Gowers points out that if paralysis of the internal muscles alone of both eyes or paralysis of the external muscles alone of both eyes is present, a nuclear lesion may be inferred with confidence. In lesions of the nerve trunks, on the other hand, paralysis of the external muscles of the eye is invariably associated with paralysis of the internal muscles. But this, too, might be due to a nuclear lesion. Therefore, when there is a combined paralysis of this kind in both eyes it is necessary to look for further evidence of involvement of the base of the brain before concluding that the lesion is nuclear. The former condition, especially in children, is certainly more common. It is very rare, however, for both third nerves to be involved alone and completely in a basal lesion, and as an exceptional case Gowers* refers to one—from which he gives illustrations—where there was paralysis of both third nerves in a child two years old, marked by complete double ptosis and divergence of both eyes by the external recti when the eyelids are raised. The child was of a tubercular family and presented also double optic neuritis and weakness of the limbs of both sides. No other cranial nerves were affected. The probable cause of the symptoms was a tubercular tumour in the interpeduncular space. Definite proof, however, was never forthcoming, because under tonic treatment all the symptoms passed away, and a year later the child appeared quite well.

The case at present under consideration was in many respects similar to this one. Both nerves were involved and on both sides there were present ptosis, divergent strabismus, fixed and dilated pupil, optic neuritis (?) and nystagmus. No other cranial nerves were affected. The mother of the child had phthisis and possibly a syphilitic taint as well.

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* 'Manual of Diseases of the Nervous System,' second edition, vol. ii, p. 181.

During the first part of the illness, which extended altogether over three months, there were no urgent symptoms. It was then surmised that the case might prove similar to that of Gowers just referred to. The later course of events, however, showed a more acute development, in part cerebral in part pulmonary.

Post-mortem examination.—The exact condition of the brain was revealed at the post-mortem, but not of the lungs or other organs as the parents limited the examination to the brain alone. The following is an account of what was found by Dr. Ivy Mackenzie, who performed the autopsy :—

"The soft coverings of the skull present nothing abnormal. The calvarium is of average size and the bone is of normal consistence. The dura mater is firmly adherent to the bone; it is smooth and glistening in its inner aspect. The venous sinuses contain dark fluid blood with some post-mortem clot of a dark colour and tough consistence. The bony surface of the floor of the skull cavity presents nothing abnormal. There is double otitis media. A moderate amount of clear cerebro-spinal fluid is present in the subdural space. The pia-arachnoid is clear and transparent in the convexity, but thickened and opaque over the base of the brain. The small vessels of the pia extending up into the sylvian fissures are studded with small pearly tubercles. The third nerve on both sides is firmly bound down by the inflammatory exudation.

"The cerebral convolutions are normally arched and the brain substance is of regular and firm consistence throughout. The markings of the grey matter are normal. There is a small caseous mass about the size of a green pea on the front of the basal aspect of the right frontal lobe, another of the same size at the tip of the right temporo-sphenoidal lobe, and a third of the same size at the extreme outside of the right cerebellar lobe. There is a caseous tubercular mass about the size of a cherry in the left crus occupying the anterior aspect. This does not involve the third nerves in any way. The brain ventricles are not abnormally dilated."

The account of the examination of the brain will bear the interpretation that the tuberculous tumours, at least the largest of them, were of long standing, and were present at a much earlier date than that on which the mother brought the child to the dispensary first. Further, since it is apparent that the paralysis of the third nerves was not dependent on the tumour in the crus, but rather on the local meningitis accompanying it and the other tumours, the latter condition must have been present at an early date also, as the eye symptoms were the first to attract attention as indications of cerebral disease. There was evidently, however, a more widespread dissemination of tubercle at a later date, which determined the acute symptoms before death. Probably the tuberculosis has been general, involving the lungs and other organs, though this was not ascertained at the post-mortem examination. The source of the infection was undoubtedly the mother, who had phthisis.

In conclusion I have to acknowledge my indebtedness to Professor Gemmell, into whose ward the child was admitted, for permitting me to make use of the reports and charts of the case; to Dr. Rowan for his examination of the child's eyes; to Dr. Christie, from whose notes I obtained an account of the child's condition while in the hospital; and to Dr. Ivy Mackenzie for the report on the pathological examination of the brain.

THE EDUCATIVE ASPECT OF GAMES.

By A. H. Gerrard, M.D.Lond., M.D.State Med., D.P.H.Oxford.

Play in childhood is instinctive, and its absence is as indicative of morbidity as much as is the absence of any other normal function. Not only is play instinctive, it is also essentially educative, for its earliest evidences are closely associated with the attraction of the attention by objects followed by attempts to touch and handle. That is to say, that elementary forms of play are intimately bound up in the process of gaining knowledge of environment, in its pleasurable aspect. Children do not play at painful games; it is only as the child grows up and approaches puberty that the elements of fatigue—distressful endurance, etc.—enter into play, and here they are overlooked in the pleasurable aspect of the hope of success.

The gaining of environment knowledge in the early days of childhood is instinctively recognised by the mother in such games as "peep-bo" and "pat-a-cake," in which the child learns to know the significance of "here" and "not here." Gradually as age advances a child begins to manipulate objects and makes attempts at holding them—objects are dropped and efforts are made at picking them up. As a rule the objects chosen by the child are bright or smooth rather than dark or rough or prickly. Noise producers are given to the little one, such as paper to rustle and things to rattle, and thus it comes to recognise the characteristics and the direction of sounds.

A little further study of the subject will show that fundamentally play is educative and not merely an empty pastime. However it is only recently that this side of recreation has begun to be widely appreciated. The kindergarten system, it is true, does in some measure utilise the knowledge imparting power of play, and now we have gone a step or two farther, such as the dressing and undressing and caring for dolls as a preparatory training for future motherhood.

As children grow up games take on certain sex characteristics, and their educative power becomes specialised, each having some distinctive features, but before this period is reached there is a time when some games are common to and indulged in by both sexes. Many of the games played during this period are also played by the children of savage races. For instance, "touch," "hide and seek," "cat's cradle," "follow your leader," and "king of the castle" are all played by Kaffir children. It will be seen that till now play does little more than provide a means of gaining knowledge of surroundings, but later on other very important elements make their appearance which afford further important powers of education.

It very often happens that profound truths get wrapped up in a proverb and the proverb is repeated and the truth missed, and this has happened with "All work and no play makes Jack a dull boy." That is to say, continued effort in one direction will produce an inefficient type of individual. Yet in spite of the proverb, play and work, recreation and study, are largely looked upon as being antithetical entities rather than component parts of a whole, rather as opponents, each of which is in some measure antagonistic to the other, than as forces mutually assisting in the complete education of the individual.

A complete education should aim at training all the faculties and should not be confined entirely to the development of the mental side. Man is not all brain, neither is he all muscle; he should, however, be a happy combination of both. The expert gymnast is entitled to be called educated just as much as the expert mathematician, if we are willing to apply the term to an individual who has developed one side of life at the expense of the other. Moreover, if the matter be looked at from a psychological point of view it will be seen that mental processes are indirectly aided by proper muscular education. We know of no mind apart from the central nervous system, we know of no co-ordinate willed movements apart from the brain. Skill, deftness, agility and keen perception in relation to the musculature, which is dominated by the nervous system, have quite as much right to the title of education as skill, deftness, agility and keen perception in relation to mental processes. One is neuro-muscular, the other neuro-mental. This aspect of the subject may be put in yet another way. Mind is the result of our past and present sensory experiences; these experiences are dependent upon our sense organs, and these organs are largely dependent upon our musculature for their varied combination of stimuli. The effect of games, therefore, upon the development of the purely mental side of education must be of great importance, though it is often overlooked by both tutor and scholar. Those schools which have turned out the finest specimens of complete humanity, that is, a robust body with a robust mind, are just those where there is a wise combination of games and scholastics. All games, however, are not equally educative, but each has its special outstanding feature, and each individual will necessarily have a predilection for some special game, but this should not be indulged in to the neglect of others. The type of individual to be aimed at is the good all-round man, good at work and good at play. From the educative point of view it is a question whether specialism in games is not rather worse than scholastic specialism. It is at least responsible for the huge football and cricket crowds, which would be far better employed playing instead of watching.

All competitive games of exercise have within them certain characteristic traits which bring out the player's power of quick, accurate response to stimuli, accurate powers of perception, even balance and ready judgment, and in many cases the suppression of evidence of emotions. The practice of such powers must have a great effect for good in the daily routine of life.

The beneficial effects of exercise of all kinds on the development of the muscular system cannot be too highly esteemed. A man has no more right to call himself in perfect health if his muscles are not in good trim than he has if his stomach is not doing its work efficiently. On the other hand, methods of physical exercise which are directed toward muscle development only, though better than no exercise at all, are but poor substitutes for games. Though the ordinary gymnastic methods have been deplored, they are in many ways infinitely superior to pulling pieces of indiarubber or squeezing spring dumb-bells. They at least give opportunities for the development of skill, and the elements of competition and association are present. Ordinary physical exercises lack interest, they lack precision, they have a tendency to become automatic, they are wanting in the element of result or competition. A large muscle may be a strong muscle, but deftness of its action, that is precision of the neuro-muscular apparatus, may be none the better for the strength. The superiority of games over mere exercise has been very clearly demonstrated in New York, where folk dancing has been introduced as part of a scheme of physicial training. Dr. Gulich, who suggested the idea, has shown that the effect on the children has been very evident, and that the dances have been a lasting source of delight.

A little consideration of the subject will show that the educative power of play is a real and important factor in the building of character. Until about the age of seven the same games are common to both sexes, but as a rule, after this age, there is a tendency for boys to play with boys and girls with girls. The boys' games take on certain characteristics, such as endurance, persistent effort, judgment, accuracy of measurement, and rapid muscular response; whilst gradually the element of submission to control makes itself evident.

The games indulged in by girls, on the other hand, were, until lately, in quite a different category. All, or nearly all, the elements previously enumerated were lacking. The result on the character of the two sexes was marked. Quick decision, ready, accurate judgment, persistent effort and endurance were largely wanting in women, whilst they were characteristic of men. Now, however, the girls are playing many of what were formerly boys' games; the type of womanhood in this respect is changing somewhat.

The influence of games on after life cannot be over-estimated, and especially does this apply to the games in which submission to control is a marked feature. It is here that the sinking of personal interests for the benefit of the team may be learned—determined effort may be practised and all the virtues acquired. When General Botha came to this country, though he had been our recent enemy, he was cheered and *fêted* much as a victor. It is a question if in any other country than one in which the winning team gives cheers for the loser such a whole-hearted demonstration for a brave enemy could have been made.

The two games which perhaps are most valuable in all directions are cricket and football, a summer and winter couple, the one of which is almost incomplete without the other. In cricket there is a training in quick decision, rapid muscular response, and accurate measurement, with just enough exercise for the season. In football, on the other hand, exercise and muscular effort stand out in marked prominence, whilst the other features present in cricket are also present in football, though in a form not quite so highly developed.

Tennis has some of the features of cricket, but lacks the team element, though its strokes require in many instances finer muscular adjustment and quicker response.

Perhaps for a single form of exercise there is nothing which equals practice with the foils. Here all the educative features come fully into play, and the muscular system is thoroughly exercised.

To-day exercise occupies more attention than it ever did, but there is a tendency for the individual to settle the matter by a series of physical exercises in the bedroom every morning, and witnessing a football or cricket match each Saturday afternoon. Physical exercises are good—physical exercises in the open air are better, but there should be some game in addition. Let the game be what it may, some exercise, however, should be taken with an object a little higher than muscle enlargement. It should be remembered that one of the features which distinguishes man from other animals is his faculty for play even in old age.

THE DIAGNOSIS OF URINARY TUBERCULOSIS IN CHILDREN.*

By Charles A. Leedham-Green, Ch.M.

Our views of urinary tuberculosis have completely changed during the last few years. Instead of regarding it as a relatively rare disease, which when present is difficult to alleviate and hopelessly incurable, we now know that the disease is exceedingly common, and when recognised early and the primary focus removed, of distinctly good prognosis. We know further that the view held for so long and so stoutly defended by Guyon, that the primary disease begins in the bladder and thence spreads along the ureters, causing a secondary infection of the kidneys, is entirely wrong.

Recent investigations on the part of both the clinician and the pathologist have now clearly shown that tuberculosis affecting the urinary tract almost invariably begins in *one* of the kidneys, from whence it spreads to the bladder. Indeed, so far has the pathological view of this disease changed that it is now believed by many (Baumgarten, Hansen, etc.) that there is no such thing as an ascending tuberculosis of the urinary tract, as it is impossible for the non-mobile tubercle bacillus to make its way against the urinary stream. Whether this extreme view is correct or not may be open to doubt, but on the truth and importance of the fact, that the kidney is infected first and the bladder secondarily in the great majority of cases, all are now agreed. The clinical significance of this pathological fact can hardly be over-estimated, for on it to a great extent rests the modern successful treatment of urinary tuberculosis, viz. the early detection and removal of the primary focus.

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* Read at the Provincial Meeting of The Society for the Study of Disease in Children, held at the Children's Hospital, Birmingham, Saturday, June the 20th, 1908.

Importance of early recognition.—The task of diagnosis in a suspected case of urinary tuberculosis is two-fold: (1) The definite proof that the disease is tubercular; (2) the detection of the primary focus of the trouble and the extent to which the disease has spread.

Rarely is any special skill required in determining whether a patient is suffering from tubercular disease of the urinary organs. The localisation of the process may, indeed, call for much experience.

Unfortunately at present men are scarcely alive either to the frequency with which the urinary organs are affected with tuberculosis, or to the significance of the vague early symptoms suggestive of its presence.

Kapsammer* recently examined the post-mortem records for ten years of the Vienna General Hospital, and found that there had been 191 cases where tuberculosis of the kidney had been found at the autopsy. Of all these only 2 had been rightly diagnosed during life, 4 wrongly so, and 185 not diagnosed at all.

Of the 185 undiagnosed in 67 cases only one kidney was involved.

I am often startled by the frequency with which I detect tuberculosis in a patient who, a few years ago before my attention had been drawn to the subject, I should contentedly have diagnosed as suffering from some condition, such as albuminuria of adolescence, essential renal hæmorrhage, chronic nephritis, nocturnal enuresis, etc.

Let me take a case in point:

A little girl was brought to me after having been under medical treatment for some time for chronic nephritis. Her history was as follows:

Some months ago she began to feel languid and to be easily fatigued, and she complained occasionally of a dull aching in her loins.

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* 'Nierendiagnostik und Nierenchirurgie Wien.,' 1907.

The urine was acid, perfectly clear and translucent, with no deposit on being left to stand.

On boiling it showed a haze of albumin, and microscopically revealed two or three renal casts and a few blood-cells. It was no wonder that chronic nephritis had been diagnosed.

But on centrifuging the urine and examining the deposit I found numerous tubercle bacilli, and further examination revealed a tubercular focus in the left kidney.

Again, a healthy-looking boy, aged 12 years, was brought by his mother because of the frequency with which he wet the bed at night. He had been treated elsewhere without avail; indeed he was worse rather than better, in spite of having been circumcised, sounded and dosed with belladonna and worm-powders, the mother finally being told that the trouble was of nervous origin and would disappear at puberty.

On examining the urine I found it highly suspicious, for it was faintly opalescent, and acid; and the centrifuged deposit showed a fair number of pus cells and an absence of micro-organisms when stained with methylene blue.

On being stained appropriately tubercle bacilli were found without difficulty.

I have quoted these two cases, not because they are of special interest or in any way remarkable, but because they illustrate the importance of two points in the diagnosis of tubercular disease of the urinary organs, viz. firstly the attention which should be given to the slightest disturbance, be it discomfort or undue frequency, in the act of micturition, and secondly, that the routine examination of a urine should include a *bacteriological* as well as the ordinary chemical and microscopical one. For it is in this way, and this way alone, that the suspicion of tubercle is likely to be raised whilst the disease is still in its early stages and most amenable to treatment.

The systematic examination of the urine of all patients suffering from albuminuria, irrespective of whether pus or blood is present, will reveal the presence of tubercle in a surprising number of unsuspected cases.

It is often stated that tubercle bacilli are difficult to find in the urine, and that they are not detected in more than 25 per cent. of such cases. This is probably true, but it is only so because the urine is imperfectly examined. If the total quantity of urine passed in twenty-four hours be mixed with a little carbolic acid and be allowed to stand for a day in a tall cylindrical vessel, and then the deposit be centrifuged and a number of stained films examined, it will be, I believe, but rarely that the specific bacilli cannot be detected. Rovsing found them in over 80 per cent. of his cases, and I do not think that figure is too high. A suspicion of tuberculosis should always be awakened when, in spite of pus cells being present in the urine, none of the usual pyogenic microbes are found. If, in spite of long and repeated examinations, no bacilli can be detected in the urine of a suspected case, then a small quantity of the urinary sediment may be injected subcutaneously or intra-peritoneally into a guinea-pig, and the animal killed a few weeks later with a view to seeing whether tubercular infection supervened or not. Under proper control-experiments this test is reliable, and may prove of great value.

Bloch advises the subcutaneous crushing of the inguinal glands of the guinea-pig prior to the injection of the suspicious urine in their neighbourhood. Should the urine contain tubercle bacilli in two or three weeks' time the crushed glands will show the characteristic lesions and the specific micro-organism.

In cases of doubt resort should be taken both to the estimation of the opsonic index of the blood and to Calmette's conjunctival or v. Pirquet's cutaneous reaction to tuberculin.

I have made use of these diagnostic tests freely, and have often received great help from them. Calmette's conjunctival reaction especially I have found most valuable and far more reliable than the opsonic index. It is true that the absence of the reaction does not necessarily exclude the presence of tubercle, especially of advanced general tuberculosis, and, on the other hand, the reaction is occasionally (never in my own cases) met with in typhoid fever and other non-tubercular conditions. Yet this does not render the reaction valueless as has been stated, any more than the occasional failure of the Widal reaction stamps it as useless. It is only those who seek for an infallible sign who will be disappointed with the reaction. Two precautions are advisable, firstly, to begin with a weak solution in each case, advancing to the stronger solution if no reaction takes place; secondly, never to employ the test if there is evidence or history of inflammation of the eye. When for any reason it seems undesirable to make use of the conjunctival reaction, the cutaneous test of v. Pirquet may be employed. It seems to be equally sensitive and is devoid of the slightest risk.

The weak point about the opsonic index and the ophthalmic and cutaneous reactions is that—(*a*) they give little, if any, idea of the severity and extent of the tubercular infection—an insignificant quiescent nodule in a lymph-gland, it may be, often giving rise to a marked positive reaction ; and (*b*) they in no wise indicate the locality of the illness.

The only reaction which gives us a clue to the site of the infection is that produced by the subcutaneous injection of Koch's old tuberculin. This test has, I think, undeservedly fallen into disrepute as being dangerous, from its liability to fan into flame a latent tubercular focus. There is no doubt that much harm was done some years ago by its indiscriminate and excessive use, but there is evidence to show that if used cautiously in suitable surgical cases it is a highly valuable diagnostic agent, for the reaction which follows its use frequently, though by no means always, indicates through localised pain or tenderness the site of the trouble. In tuberculosis of the urinary organs the injection often produces such a temporary alteration in the character of the urine by the presence of pus cells and tubercle bacilli as to clear up all doubt as to the nature of the illness.

Having found tubercle bacilli in the urine, or otherwise being satisfied that the suspicion of tuberculosis of the urinary organs is justified, the next step in the diagnosis is the detection of the primary focus and the determination of the extent of the disease.

This is an essential step in the modern surgical treatment of urinary tuberculosis, and upon the accuracy with which it can be determined largely depends the success of the treatment. Happily, owing to recent improved methods of urinary diagnosis, a great refinement in diagnostic power has been attained, so that we are not only able in the majority of cases to detect the primary focus, but even to estimate, with surprising accuracy, the extent of the disease. Having found tubercle bacilli in the urine the next point is to determine the condition of the two kidneys and the bladder, for, for the purposes of this paper, we may ignore the possibility of the primary focus starting in the testicle (the detection of which offers no difficulties) and in the ovary or tube, which from anatomical reasons is exceptionally rare.

In practice the problem is narrowed down to this : (1) Is the bladder involved ; if so, how far ? (2) What is the condition of each kidney ?

Before these questions can be fully answered a thorough and methodical physical examination of the urinary organs is essential. It is unnecessary to enter here into all the details of such an examination, and I must confine my remarks more especially to those points where the technique in dealing with the child differs from that as applied to the adult.

Special attention should always be paid to the condition of the ureter. If the kidney is tubercular the patient will generally complain of pain on pressure being made over the course of the ureter, more especially at the hilum of the kidney, at the point where the ureter passes over the brim of the true pelvis and at its entrance into the bladder. The lowest portion of the ureter is directly accessible to palpation by the finger inserted *per rectum* in the male and *per vaginam* in the female. In the normal condition it is rarely possible to distinguish the form of the ureter, but when affected with

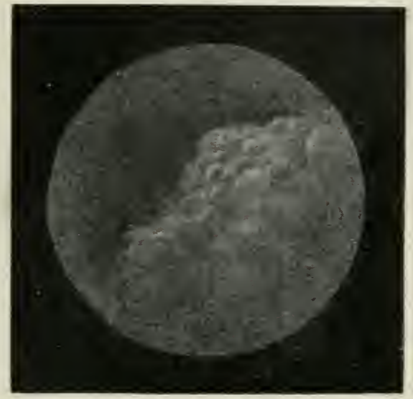


Fig. 1.—A characteristic early tubercular infiltration, as seen through the cystoscope.

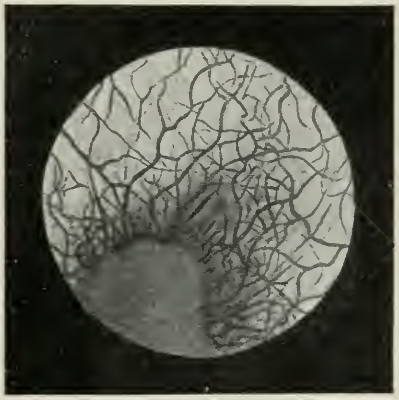


Fig. 2.—A large tubercular ulcer below the orifice of the right ureter.

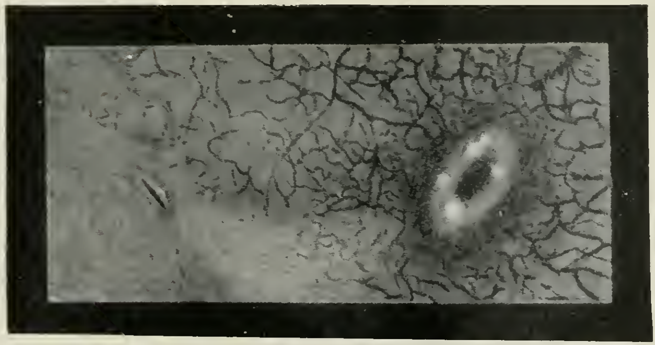


Fig. 3—Cystoscopic view of the base of the bladder in a case of tuberculosis of the left kidney (Wyatt). The opening of the right ureter is normal; the opening of the left ureter is seen to be gaping, the lips œdematous and thickened, showing the presence of small miliary tubercles.

tuberculosis it can almost always be felt as a cord-like structure, indurated and sensitive.

The extent of the involvement of the bladder may be roughly gauged by its tolerance of distension. If the urine can be retained for some hours without discomfort, or if the bladder can be moderately distended without giving rise to tenesmus or hæmorrhage, it is improbable that there is any extensive tuberculosis of that organ. But to gain anything like an exact idea of the condition of the urinary organs a cystoscopic examination is essential.

Thanks to the excellent optical arrangement of the modern cystoscope, by which even with so fine a calibre as No. 14 or 15 (French scale) a clear field of vision is obtained, simple cystoscopy can be practised in the youngest girls and in boys over eight years of age.

In the majority of cases the bladder will show some signs of the disease. This holds true not only in those cases of relatively advanced tuberculosis of the kidney where the infection has spread down the ureter and involved the bladder, but also in those cases where the mischief is still confined to one kidney and there is an absence of all bladder symptoms. In the former, tubercular nodules and ulceration will be seen grouped for the most part about the opening of one of the ureters.

In the early stages of kidney tuberculosis the bladder may be quite free from ulceration or gross lesions of any kind, but it is rarely that a careful inspection of the opening of one of the ureters does not show some indication of the trouble, such as hyperæmia and inflammatory œdema of the lips of the opening, pouting, gaping, or retraction of the orifice.

If the tubercular lesions are grouped wholly or largely round the mouth of one ureter, the rest of the bladder-wall being healthy, there is strong presumptive evidence that the kidney on that side is the origin of the trouble. I say "presumptive" evidence, because although as a rule subsequent investigation will prove this to be true, yet every now and again it is found that the lesion in *the bladder* is most marked on the *opposite side* to the affected *kidney*. Or, although both kidneys are severely infected, the bladder trouble is localised round one ureter only. And again, and not infrequently, though only one kidney is affected, the whole of the bladder is ulcerated. I am therefore amazed when I read of surgeons trusting to a simple cystoscopic examination to decide as to the condition of the two kidneys.

A valuable adjunct to the simple cystoscopic examination is the so-called chromo-cystoscopy, which consists essentially in the observing by means of a cystoscope the excretion by the kidneys of a pigment (carmine blue) injected subcutaneously. If the bladder of a healthy person is cystoscoped a few minutes after the subcutaneous injection of the pigment and the opening of the ureters be watched, a jet of blue-black urine will be seen to be squirted from time to time into the bladder by the peristaltic contractions of the ureter. If there be any mechanical or functional interference with the secretion or excretion of the urine, then the excretion of the blue pigment will be delayed, diminished in amount, or absent altogether. If the urine is seen to be entering the bladder in regular forcible squirts of dark blue fluid from both ureters the presumption is that both kidneys are healthy. If, on the other hand, the blue jets are seen on the one side only, and from the other ureter issues only faintly stained, or clear fluid, the probability is that the disease of the kidney or ureter is on the side of the unpigmented urine. If the excretion of blue is very faint, greatly delayed, or absent altogether on both sides, then the suspicion is raised that both kidneys are diseased.

For lack of time I have been obliged to state this very crudely. There are many points to which attention must be paid before drawing important conclusions from the chromo-cystoscopic appearance. But, with all its reservations and possible fallacies, chromo-cystoscopy is of great service in the diagnosis of tubercular disease of the kidney. It rarely fails to indicate which kidney is the chief seat of the disease and from which the infection of the bladder has sprung. And it gives some indication, though not a very fine one, as to the amount of destruction which has taken place, and the power of functional activity which remains. Too much reliance must not, however, be placed upon it, for though gross lesions are generally clearly indicated, small though serious ones may not be shown. Thus, because the blue pigment is seen issuing from both ureters, it does not necessarily mean that both kidneys are sound, or free from tubercle. As an adjunct to our diagnostic measures it is most valuable, but it lacks the necessary delicacy which it is so desirable to obtain when deciding whether nephrectomy is permissible or not. The only way in which a really accurate knowledge of the condition of the kidneys can be gained is by collecting the urine as it is secreted from each kidney separately.

In the adult there is, I believe, only one method by which this can be done worth consideration, and that is the catheterisation of both ureters by means of the cystoscope. And this is certainly the method of choice in the case of the child where the size of the urethra will permit the introduction of the instrument. Unfortunately, the finest catheter-cystoscope which can be made (No. 18 French) is too large to permit of its passing down the urethra of a boy under twelve or thirteen years of age. Consequently there are many cases where the catheterisation of the ureters cannot be undertaken in children, and reliance must be placed upon other measures. In the majority of such cases I find that the results of chromo-cystoscopy, taken together with such data as may be gained by noting the daily excretion of urea, the freezing point of the blood, and the interval which elapses between the subcutaneous injection of phloridzin and its first appearance as sugar in the urine, not only indicate the site of the tubercular lesion, but also the functional activity of the kidney with sufficient accuracy as to enable one to decide whether a nephrectomy is feasible or not.

In some cases, however, one sees numerous tubercle bacilli in the urine with perhaps an occasional attack of transitory hæmaturia, where neither the simple nor the chromo-cystoscope nor palpation enables one to say on which side the lesion is present.

To decide the point an exploratory nephrotomy may be made, but it is an operation of considerable severity for a child, and may be attended by severe hæmorrhage difficult to arrest. A much simpler procedure, and one which I have found entirely satisfactory, is to expose the ureter subperitoneally by a small incision in the semilunar line of the abdominal wall, open its lumen by a small longitudinal cut and insert a fine urethral catheter, and so collect the urine separately. When the examination is completed a fine stitch closes the opening in the ureter, which is then dropped back into its place and the wound drained for a day or so.

Provided the urine from the two kidneys has been collected separately, there is rarely any difficulty in determining both the site and the extent of the disease and the likelihood of operative interference proving successful.

THREE CASES OF CONGENITAL HEART DISEASE.

By George Carpenter, M.D.

The following cases were exhibited to The Society for the Study of Disease in Children, during the session 1907–1908 (Cases 1 and 2 on February the 21st, and Case 3 on March the 20th, 1908), and will shortly be published in their 'Reports,' vol. viii. They are provided with a clinical history and a pathological report, and are therefore of interest to the clinician as well as the pathologist, and that being the case they are reported in the JOURNAL.

CASE 1.—*Aorta arising from both ventricles; small pulmonary artery with two semilunar valves; patent ductus arteriosus; semilunar valve efficiently guarding foramen ovale, but displaying a tiny perforation.*

Olive May F—, aged 10 weeks, was admitted into the Queen's Hospital under my care on December the 21st, 1907. Her parents were healthy. The mother had had twelve children and four had died. Of the latter two died from whooping-cough (twins), one, a full-time child, was stillborn, and one, a six-months premature child, was alive at birth and weighed only 1 lb. 2 oz.

The patient was "born with jaundice," but was a fair-sized baby; since her birth she had wasted. When two weeks old she was brought to the hospital, and had been a regular attendant since. She took food well and slept well, but was restless when awake.

When admitted into hospital she was found to be an anæmic, ill-nourished, and ill-developed child. The frontal and sagittal sutures were patent and the anterior and posterior fontanelles widely open; no craniotabes. The cartilages of the last five or six ribs were very ill-developed, and of the last four were certainly absent. Her tongue was large and swollen and protruded from her mouth, and she was apparently unable to close the lips.

Heart.—The first cardiac sound was best heard in the fourth interspace internal to the nipple line. The area of dulness was increased to the right of the right sternal margin. There was a loud systolic murmur best heard over the pulmonary orifice. It was audible over the chest, front and back, and heard better on the left side in front than on the right. The liver was not felt, the spleen was palpable. On January the 1st she had clonic convulsions on the left side during the afternoon, and was given a dose of syrup of chloral (♏v), when the fit ceased. At 11 p.m. the pulse was very weak, she was much collapsed, and was given a mustard bath. At 12·15 she was infused into the axilla with two ounces of saline and half a drachm of brandy. While in hospital the temperature was raised on two occasions, once to 100° F. and once to 100·4° F.; it was otherwise normal or subnormal. She was never cyanosed at any time. Death took place at 11 a.m.

Post-mortem.—The aorta was situated over the right and left ventricles, four fifths of its lumen being over the latter.

Its cut end measured $\frac{1}{4}$th inch across and it had three normal semilunar valves.

The coronary arteries were normal.

Below the channel of the aorta was the upper border of a thick fleshy partition, the top of a septum ventriculorum. This border was rounded and lay underneath and close to the channel of the aorta. It took tendinous origin in front between the left and anterior semilunar aortic valves at the undefended space, and was attached about $\frac{1}{8}$th inch below their point of union. Behind it ended in a fibrous attachment, which joined the auricular septum, and which separated the mitral and tricuspid valves and was placed $\frac{1}{4}$th inch below the convexity of the left semilunar cusp near its junction with the posterior semilunar. The attached portion of the anterior cusp was hidden by this muscular bridge which stretched across it (*vide* Fig. 1; the muscular bridge has been cut across and turned to the right).

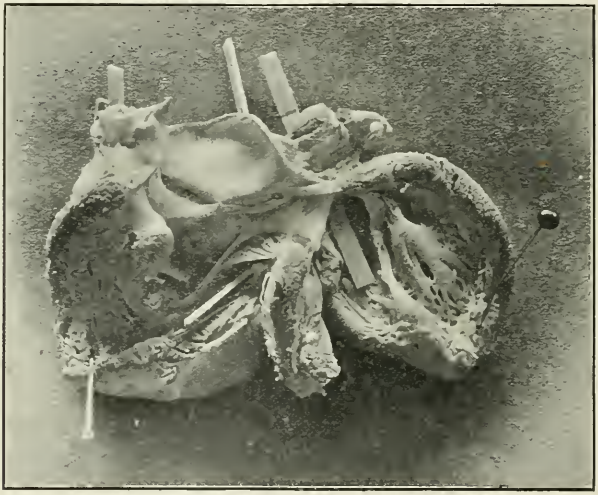


Fig. 1.—The left ventricle has been laid open and the aorta also. Note stick to the left passing down the pulmonary artery—it has been bent, and its lower end is just visible in the right ventricle. The middle stick has been passed *via* the right auricle into the left ventricle through the tricuspid valve. Note the cusp of the tricuspid valve arising from the tendinous continuation of the ventricular septum. The fleshy ventricular septum has been cut across and part turned to the right. Note the aorta arising from the right ventricle as well as the left. The stick on the right is passed through the mitral valve from the left auricle. (From photograph by the author. Natural size.)

The pulmonary artery was obviously small and measured at its cut end ⅛th inch across. It possessed two valves only, an anterior and a posterior, well formed, of equal size, but smaller than the aortic valves (*vide* Fig. 3).

Following the direction of the pulmonary artery downwards into the right ventricle and below its posterior cusp the muscular wall, an offshoot from the septum, ended abruptly by a rounded edge ¼th inch below the lowest attached end of the posterior semilunar valve (*vide* Fig. 3). In breadth it was perhaps a trifle wider than ¼th inch, and it stretched across the right ventricle from the septum to its anterior wall.

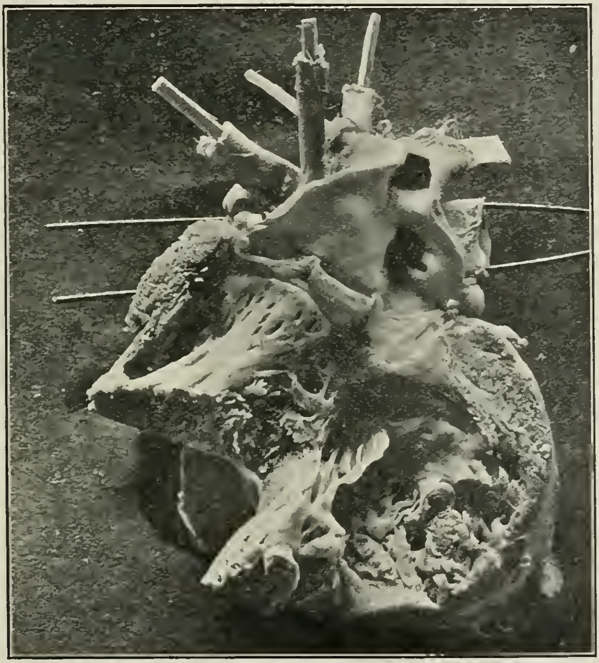


Fig. 2.—The right ventricle has been opened and displays a cusp of tricuspid valve and an enlarged pulmonary artery dividing right and left (hair-pin passed through) to the lungs. Above this is the ductus arteriosus. A piece of wood can be seen at the bottom of this, which has been passed through the thoracic aorta. The narrow sticks of wood mark the blood-vessels arising from the aorta, which is lost to view behind the pulmonary artery. (From photograph by the author. Actual size.)

Looked at from an opening in the bottom of the ventricle this muscular barrier divided the cavity into two parts, viz. one part in connection with the tricuspid valve and the aorta, the other part leading to the pulmonary artery, of which the area leading to this vessel was quite a small affair, not much larger than the pulmonary artery itself. This muscular spur was nearly $\frac{1}{4}$th inch thick.

Viewing this structure on the side of the aorta, in front it formed a V-shaped union (*vide* Fig. 1) with the septum ventriculorum to its left, and to its right it ended under the anterior aortic cusp, and on which the whole of this valve was seated. The aorta, therefore, in part arose from this spur. The remaining part of the aorta took origin from the right ventricle mainly, though the bulk of its channel lay in the direction of the left chamber.

The anterior curtain of the mitral valve, which was opaque and somewhat thickened in part, originated in the fibrous attachment in which the tip of the septum ventriculorum ended posteriorly. The anterior cusp of the mitral valve thus shut off the left auricle from the right ventricle.

The anterior tricuspid curtain also in part took origin from this fibrous attachment of the septum ventriculorum. Close to this fibrous attachment on the top of the interventricular septum were some tendinous threads which passed into this cusp.

The posterior segment also in part took origin from the fibrous attachment as well as being fixed by some fibrous threads at the top of the septum.

In the septum between the two auricles was an oblique channel of the capacity of an ordinary school slate pencil. It was guarded on the left by a fibrous valve (semilunar valve) of some thickness, attached above and below to the wall of the left auricle, its free and rounded and rather concave edge projecting into the left auricle. Behind it disappeared in the auricular septum, of which it was part and parcel, and with which it eventually blended. On the septum on the right side there was a corresponding depression, the foramen ovale, completely guarded by this semilunar valve. But the valve, although sufficient to cover the foramen, yet displayed a small perforation about the size of a large pin puncture. The two auricles were of about equal capacity and thickness. The heart was inclined to bun shape, and the left ventricle was twice the thickness of the right (*vide* Figs. 1 and 3).

The pulmonary artery divided into two branches of about equal size, and there was a third patent vessel the size of a silver probe, apparently the ductus arteriosus. A similar patent vessel corresponding to the situation of the ductus arteriosus was found in the aorta, but the arteries were unfortunately severed before the connection had been verified.

The pickled organ weighed three quarters of an ounce.

Liver.—The central parts of the lobules appeared unduly pale, and these microscopically stained poorly in relation to other parts, which took the stain well. The liver-cells were rather ghost-like. There was also over-nucleation in some of the portal canals. The capillaries were plentifully supplied with red blood discs. All other organs were quite healthy.

The tongue did not display any naked-eye abnormality on section.

CASE 2.—*Defective auricular septum; right auricle the much more capacious of the two and twice the thickness; pulmonary artery larger than aorta, the thoracic aorta being practically a continuation of that vessel by the ductus arteriosus; arch of aorta constricted at its junction with the ductus arteriosus.*

Ivy C—, aged 9 months; had wasted for one month. Mother had had nine other children: three miscarriages, three premature, six alive, the others died when a few months old. Twins before the birth of patient, now deceased, and before these a premature birth which only survived a few hours.

On examination.—A small snuffling child, not cyanosed, but, according to its mother, "gets blue." She had snuffled from birth, but there was no discharge by the nostrils.

She had a decided rickety rosary, the wrist ends were enlarged, the anterior fontanelle was widely open, there was no cranio-tabes and the liver and spleen were not enlarged.

Heart.—Apex beat fifth interspace, $\frac{1}{4}$th in. outside the nipple. A systolic bruit was heard loudest at the second left interspace near the sternum, but it was not at all striking (child crying loudly). There was neither thrill nor epigastric impulse. Previous to my examination the house-physician had described "a loud somewhat harsh systolic murmur, best heard over the pulmonary area, but also heard to the right of the sternum and its upper end." By X-ray examination the right side of the heart was one finger's breadth to the right of the right sternal margin, and the extreme left side was nearly two fingers' breadths to the left side of the left sternal margin. That was on January the 13th, 1908. On the 16th I again examined the heart under more favourable circumstances, and the systolic bruit was loudest over the third left interspace close to the sternum. It was audible all over the chest, back and front, conducted better to the child's left side than to its right, and was heard in the great vessels of the neck. In the interval the child had developed pneumonia, and there was dulness, tubular breathing, and broncophony over the right base. She was very pale and very thin. At 6 p.m. she was admitted into hospital extremely collapsed, and at 9 p.m. her temperature was 107° F. Between this time and 10 o'clock the following morning, when she died, the highest temperature was 106° F. and the lowest 104·2° F. *The child was at no time cyanosed.*

Autopsy.—Pneumonia was found as described during life. The heart was inclined to be rounded on the right side; the left ventricle, although appreciably more muscular than the right, did not bear the usual relative relationship in regard to thickness.

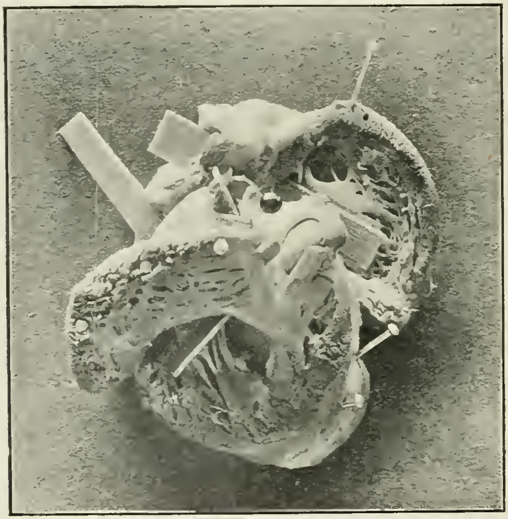


Fig. 3.—The left ventricle has been opened and shows the small pulmonary artery with two valves—one cusp distended by a piece of wood. To the left of this is the aorta. A stick has been passed along this into the right ventricle in front of the tendinous cords of the tricuspid valve. This stick will be seen to be obviously bent. The long stick at the top of the figure has been passed *via* the right auricle, through the tricuspid valve into the right ventricle. It is lying deeply. The top stick to the right is passing through the left auricle into the left ventricle through the mitral valve. (From photograph by the author. Natural size.)

The pulmonary artery was a trifle larger than the aorta. It possessed three semilunar valves of equal size (*vide* Fig. 2). It branched right and left into vessels $\frac{1}{4}$th inch in diameter, and was continued onwards by a vessel which curled over the bifurcated artery and terminated in the aorta.

The aorta was a somewhat smaller vessel than the pulmonary artery. It displayed three semilunar valves of equal size, and above them were seen the orifices of three coronary arteries, two of them being close together. This vessel having given origin to four great vessels instead of three terminated in the thoracic aorta—the continuation of the pulmonary artery (Figs. 4 and 5). At the actual junction of the pulmonary artery and the aorta the latter vessel was narrowed (Figs. 4 and 5), and at this point was somewhat larger than the arteries arising from the aorta. Beyond this union the aorta was smaller across than either branch of the pulmonary artery, being $\frac{3}{16}$ths inch in diameter, and it was a direct continuation of the pulmonary artery rather than of the aorta.

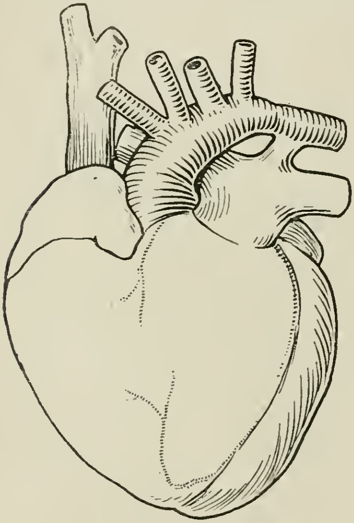


Fig. 4.—Front view of heart showing continuation of the pulmonary artery (ductus arteriosus) as the thoracic aorta. The innominate artery arising as two vessels. Semi-diagrammatic representation (*vide* Fig. 2).

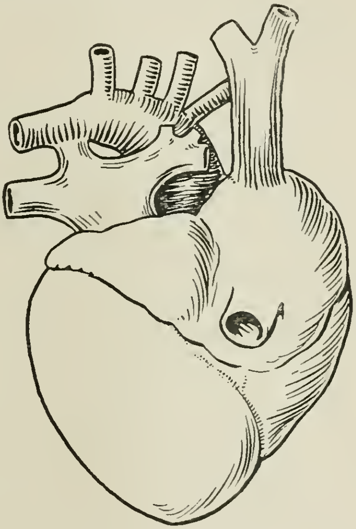


Fig. 5.—Back view of heart, showing continuation of the pulmonary artery (ductus arteriosus) as the thoracic aorta. Semi-diagrammatic representation (*vide* Fig. 2).

The thoracic aorta was therefore supplied by the aorta and pulmonary artery, while the great vessels of the head and neck and upper extremities were filled by the aorta.

The right and left auricles practically formed one large chamber, the right side being much the more capacious. The auricular appendix on the right side was a large affair and part and parcel of the auricle, whereas that on the left side was small and rudimentary.

The auricular septum was represented by a translucent membranous partition of semilunar outline hanging from the roof attached back and front, and with the arc or bow at the top, and with the base of the bow hanging free in the chamber and falling far short of the ventricular septum (Fig. 6). It measured a trifle more than $\frac{1}{4}$th inch in depth, and about $\frac{5}{8}$ths inch from before back. Posteriorly it was a trifle fenestrated. The right auricle was about twice the thickness of the left. Looking into the chamber on the right side was seen the trefoil arrangement of the tricuspid valves and on the left the two leaves of the mitral valve. Between them, wall-like, lay the upper rounded edge of the septum ventriculorum, which here ended free, and from the sides of the wall sprang the cusps of the tricuspid and mitral valves.

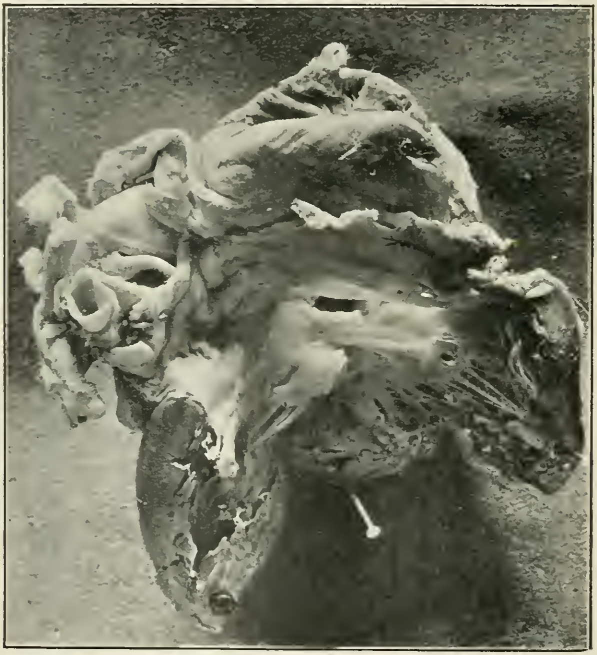
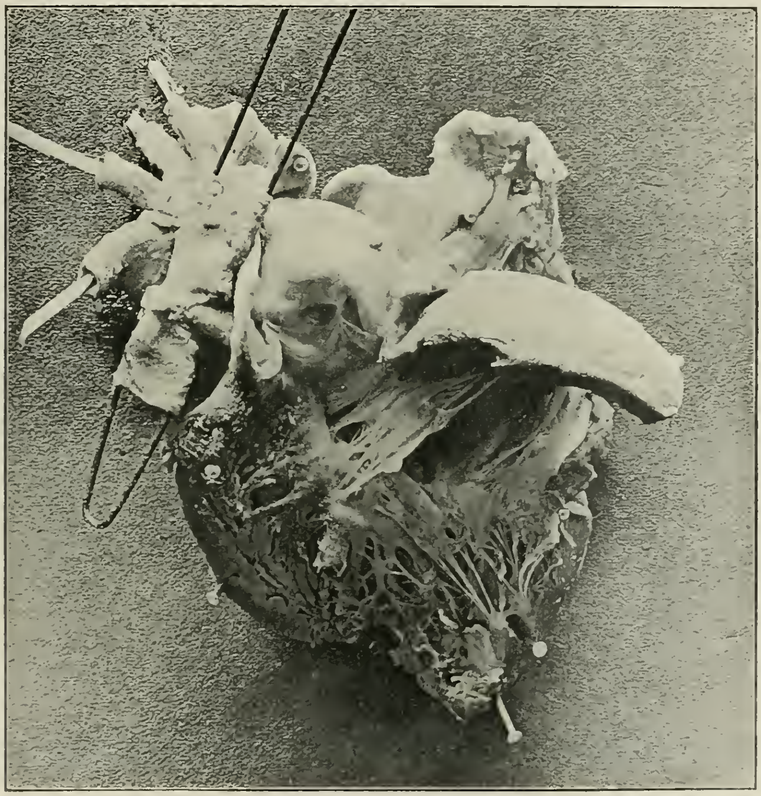


Fig. 6.—The left ventricle and left auricle have been opened by a lateral vertical incision. Note in the foreground the cusps of the mitral valve, behind this a dark hole, the opening of the tricuspid valve with the cusps surrounding it. Below this is the top of the ventricular septum. Above the black hole is the inter-auricular septum translucent below, opaque above, with fenestræ posteriorly. (From photograph by the author. Actual size.)

On looking into the left ventricle the aortic cusp of the mitral valve was seen to extend as far as the origins of the semilunar valves, the posterior and the external.

The top of the ventricular septum was seen to pass from before backwards and obliquely downwards. The top of the fore part was muscular and joined the aorta at the external (partly) and the anterior aortic valve where it met the undefended space. Behind this part it was membranous. Here the aorta and the anterior wall of the auricle and the fore-end of the membranous septum were united, and at this spot the muscle of the ventricle terminated.

Fig. 7.



Viewed by transmitted light there was seen a definite ring, the commencement of the aorta. From this ring hung a membranous curtain, the aortic flap of the mitral valve, which was attached on either side. On one side it was fixed by tendinous cords to the top of the ventricular septum, which here rapidly fell away, leaving a large membrane occluded area. On the other side it was attached to the side of the ventricle directly and by papillary muscles. This curtain, although much broken up into tendinous chords, was nowhere perforated, and it appeared to readily shut off the ventricle and the auricle. On the opposite side the tricuspid flap arising from the ventricular septum and the adjoining auriculo-ventricular ring aided in the separation of the two ventricles, and the tricuspid valve was efficient. The pulmonary artery, unlike the aorta, arose entirely from muscle; that of the right ventricle and its chamber was a direct communication with it. Although the aorta was in direct communication with its ventricle, the cavity of the ventricle was smaller and the aortic orifice was narrower.

CASE 3.—*One auricle; fused mitral and tricuspid valves making one large bicuspid valve; ventricular septum not quite complete; patent ductus arteriosus.*

Minnie L—, aged 5 months, a Mongol, was admitted into the Queen's Hospital on March the 4th, 1908. A breast-fed child, she was apparently healthy until three days before, when she became sick and declined her food. The mother thinks it changed to a blue colour soon after birth and did not thrive well. When admitted into hospital she was blue and there were signs of bronchitis, but the former disappeared, though occasionally she has attacks of cyanosis now.

Heart.—The cardiac impulse is in the sixth interspace half a finger outside the nipple line. The nipple is on the fourth rib. The heart is outlined above at the third costal cartilages and the corresponding portion of the sternum. Its extreme right border is a finger's breadth to the right of the right sternal margin. On the left it reaches the nipple, which is two fingers' breadths to the left of the left sternal margin, and from thence extends obliquely downwards to the apex beat.

There is a loud systolic murmur. This is best heard at a point midway between the apex beat and the junction of the seventh costal cartilage with the sternum, next over this spot, next over the apex beat, much less distinctly over the third left interspace near the sternum, next just outside the left nipple, and next over the right nipple but somewhat higher.

Over the top of the sternum it is audible and it can also just be heard in the neck, but it is not loud there. It is heard in the back faintly, the left side the louder of the two. There is no thrill. A valvular snap is felt all over the præcordium with the systole.

Hæmoglobin, 70 per cent.; red blood-corpuscles, 4,800,000; white blood-corpuscles, 15,000; differential count: polymorphs, 65 per cent.; lymphocytes, 30 per cent.; mononuclears, 3 per cent.; eosinophiles, 2 per cent.

The exhibitor said he was not inclined to express any opinion as to the nature of the malformation.

On March the 11th there were a few consonating râles to be heard over the left scapular angle, and on the 16th there was diminished resonance over the left lung behind, just below the angle of the scapula, with tubular breathing and consonating râles. Over the right lung behind there were a few bubbling râles to be heard over both lobes.

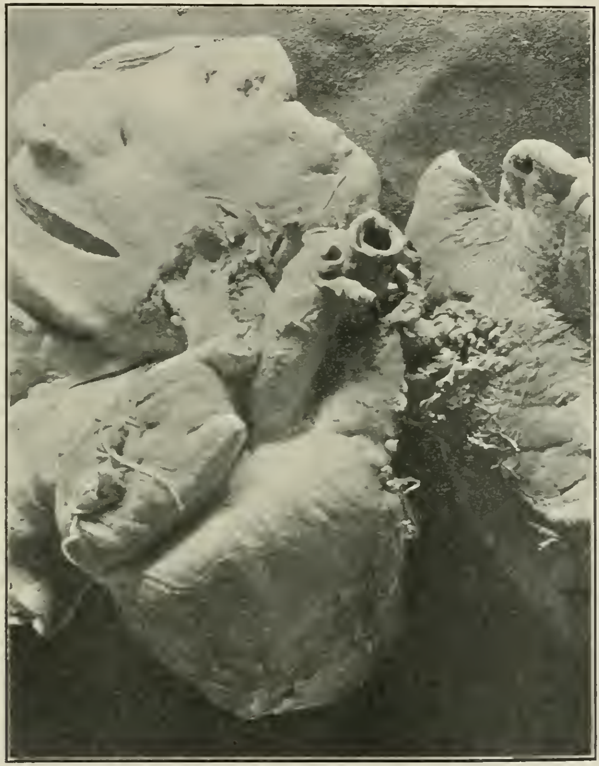


FIG. 8.—Heart and lungs, natural size, removed from a Mongol aged 5 months. Note the aorta passing over right bronchus. To the left is the superior vena cava, behind this the pulmonary vein, and behind that the right branch of the pulmonary artery. On the right side is the pulmonary artery with the ductus arteriosus passing over the left bronchus. To the right of this in the foreground is a cut pulmonary vein, behind that the left bronchus, and above the bronchus is the left branch of the pulmonary artery. Note the windpipe cut across, behind this the œsophagus with a stick in it. The aorta is seen with the vessels for the upper extremities arising from it. (Photograph by the author. Natural size.)

The child died a day or two after its exhibition to the Society. An autopsy was performed, and the following abnormalities were detected :

The arch of the aorta is seen passing over the right bronchus (*vide* fig. 8), and a small patent ductus arteriosus passes to the left of the trachea and the œsophagus—which is marked by a piece of wood in the tube—and joins the aorta on the left. The aorta and the pulmonary artery possess the normal number of valves and are of natural proportions. On the right side will be seen (left of picture) the superior vena cava entering the right auricle, and behind it is a large pulmonary vein, and behind and above that the right division of the pulmonary artery. On the left side (right of picture) is first a pulmonary vein cut across displaying behind it the left bronchus below, and just above the bronchus the left branch of the pulmonary artery. The aorta is seen to be giving off four separate trunks in the position of the brachio-cephalic

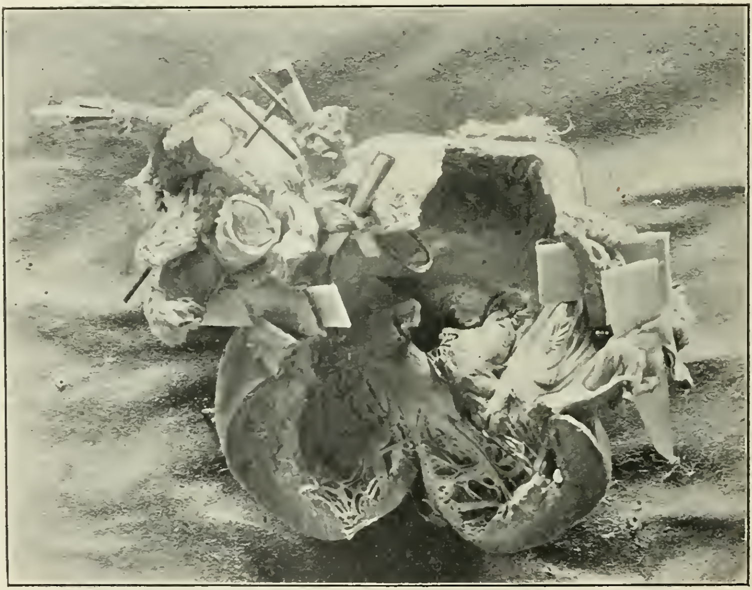


Fig. 9.—Heart of a Mongol aged 5 months. The left side of the heart has been opened by a vertical slit and displays the following features: One auricle; right mitral and tricuspid valves making one large bicuspid valve; the top of the ventricular septum. For other features see text. (Photograph by the author. Natural size.)

vessels, the fourth being in close proximity to the ductus arteriosus. In Fig. 9 the heart has been separated from the lungs. A cut has been made vertically through the auricle and ventricle laterally, and the organ has been opened out and pinned in position. This section displays, above an auricle of only one chamber without a trace of septum. The right side is large and fleshy with prominent columnæ carneæ, the left, which is not specially noticeable in the picture, is small and membranous. At the top left-hand corner is the superior vena cava—a hair-pin has been passed through that into the auricle. In front of this are two veins (right pulmonary) with pieces of wood passing through them into the auricle. Below this to the left is a piece of a large vein (left pulmonary) passing into the auricle, which here is membranous. It also has a piece of wood in its channel. On the right of the auricle is the opening of a piece of the inferior vena cava passing into the fleshy auricle with a stick of wood in its channel. In front of that is a piece of wood which marks the tract of one of the left pulmonary veins passing through the membranous part of the auricle. The top of the inter-ventricular septum is well seen, and above it is a bicuspid valve of considerable size separating the auricle from the ventricles and possessing tendinous attachments to the papillary muscles of both ventricles. On the right side there are some filamentous strands partially attaching the cusp to the ventricular septum, but on the left these are absent. The front valve has been injured in preparation, and is seen torn across in the far left-hand corner, but during life the parts were united. The valve is of a dull leaden colour—of morbus cæruleus hue even after soaking for weeks in formalin. There is a distinct interval between the under surface of the valve and the top of the ventricular septum, more obvious on the left than the right because the belly of the right cusp (posterior) hides it, so that during life there must have been a communication between the two ventricles. On the left of the cardiac chambers will be noticed the following structures. On the extreme left is the descending aorta with a piece of wood in it. In front of that is the œsophagus with a round-headed pin within it. Next are the right and left bronchi with a piece of wire passed through them, and next the branches of the pulmonary artery filled with blood-clot. To the left of the aorta, seen as a rounded cord, is the ductus arteriosus, passing from the former to the pulmonary artery; its junction is obscured by the left bronchus. All these structures have been left *in situ*, but they are only called attention to merely as a matter of passing interest. The important features of this figure are those which have been previously described.

Remarks.—Neither Case 1 nor Case 2 was cyanosed, although in both instances there must have been a free admixture of arterial and venous blood, and Case 3 lost its cyanosis on admission into hospital and only was cyanosed occasionally, in spite of the freest possible admixture of arterial and venous blood.

So often does this happen in cases of congenital malformation of the heart, and so infrequently is it attended by cyanosis that it hardly seems worth while to seriously consider a theoretical explanation for the blueness, which affords so little corroboration in practice.

Cyanosis is an indication of deficient aëration, not of the admixture of arterial and venous blood.

The addition of extensive consolidation of the right lung in the second case was not sufficient to curtail its complete oxygenating functions. Although congenital heart disease and morbus cæruleus are often viewed as inseparable partners, yet this is by no means the fact, as frequently cyanosis does not appear for months or even years. It often arises after some acute illness, such as measles, scarlet fever, typhoid, bronchitis, and diarrhœa.

The most common murmur in congenital malformation of the heart is a systolic bruit, which is often audible all over the chest, back and front, and is best heard over the pulmonary artery or along the left side of the sternum at some point between the pulmonary artery and the junction of the xiphoid and manubrium sterni or at that spot. This is a murmur which occurs with stenosis of the pulmonary artery or with a perforate septum ventriculorum, either separately or in combination. Further, when the septum is perforate the murmur is usually audible in the great vessels of the neck, but not otherwise.

When once present it always persists, but even then varies in intensity from time to time. But while one is perhaps warranted in diagnosing malformation of the pulmonary artery in children beyond the age of two years when such a murmur is detected, yet the cases just selected illustrate the fact that in infants, at any rate, systolic bruits of greatest intensity over the pulmonary artery or between there and the xiphoid cartilage in the vicinity of the left margin of the manubrium sterni do not permit the same deductions being drawn from them. It is during the first few months of life that those with the more pronounced cardiac malformations succumb to their abnormalities, and it is not until these have been eliminated that such sounds, if heard on auscultation, will be likely to be correctly interpreted by the diagnosis of malformation of the pulmonary artery or defects of the ventricular septum.

While in infants the detection of a loud systolic bruit may be looked upon as the most reliable and most constant, and often the only obvious, sign of congenital malformation of the heart, yet the attempt to discover the nature of it by means of the bruit is most untrustworthy and most misleading.

Abstracts from Current Literature.

Medicine.

Treatment of hydrocephalus (*'Berliner klin. Wochens.,' No.* 45, 1907).—**Freund,** in the medical section of the Silesian Medical Society (Breslau), related the case of a child, at that time aged 15 months, in whom, when seven months old, an acute cerebral condition was observed in the course of a serous meningitis treated by lumbar puncture. Immediately following the subsidence of the acute symptoms an increase in the size of the skull came on, which during the next five months progressively increased three inches, so that at the age of one year the child's head measured twenty inches in circumference. This was treated by repeated lumbar puncture; there were four punctures in the course of a month and a half, and at each time 1½ to 3 oz. of fluid was removed. After the first puncture further increase in the size of the skull ceased and a considerable reduction in the circumference came on, and at that time, three and a half weeks after the last puncture, the skull measured only eighteen inches. The cranial sutures, which before were widely gaping, had come together; the fontanelle was reduced in size and no longer abnormally tense; the intra-cranial pressure seemed to have returned to the normal, and the exudative process was quite at a standstill. Freund had no doubt that this was a result of the lumbar puncture, he remarked that though the circumference of the child's head was nearly normal it was exposed to two dangers: On the one hand, the possibility, in later life, of a return of the serous meningitis, and on the other hand, some affection of the motor or intellectual functions: the latter were fortunately normal in the case recorded. J. E. BULLOCK.

Scarlet fever in the Metropolitan Asylums Board hospitals (*'M. A. B. Reports,'* 1907).—Scarlet fever was more prevalent in London during 1907 than in any year since 1893, when 36,901 cases were notified. Out of 25,925 cases notified during 1907, 22,764 were admitted to the Metropolitan Asylums Board hospitals; 622 died—a mortality of 2·80 per cent. The percentage error of diagnosis in cases admitted was 6·8; 1670 were found to have other diseases, among which were 137 of measles, 377 of rubella, 264 of tonsillitis, and 322 of erythema, 134 had no obvious disease, and 164 were not diagnosed. The commonest complications were otitis (11·4 per cent.), albuminuria (10·4 per cent.), secondary adenitis (6·87 per cent.), nephritis (4·32 per cent.), and rheumatism (3·16 per cent.); 325, or 1·47 per cent., had relapses. There were 248 cases of post-scarlatinal diphtheria with seven deaths—a mortality of 2·82 per cent. J. D. Rolleston.

Nephritis due to aspirin (*'Arch. of Pediat.,' vol.* xxv, *p.* 300).—**M. Packard.**—A boy, aged 4½ years, had an attack of rheumatic tonsillitis for which five grains of aspirin four hourly were prescribed. After two doses the fever subsided, but the patient appeared worse. He was sleepy, the face and tibiæ were œdematous, the urine was scanty and of a uniform bloody colour, and showed numerous blood-casts and renal epithelium. Aspirin was stopped, and after a few hot baths the patient recovered. In a week's time the urine was normal, and another five grains of aspirin were given to determine whether the nephritis was due to the drug or to the tonsillitis. Although the urine was not so red as before, albumin with blood-casts and renal epithelium was again found. Six months later the urine was normal. J. D. Rolleston.

Diphtheritic conjunctivitis following measles (*'Thèses de Lyon,'* 1906–1907, *No.* 115).—**R. J. Laugier** has collected twenty-two cases of this grave affection, including five not hitherto published. Ten died, five suffered total loss of one or both eyes, and in two ocular troubles persisted, *e.g.* corneal opacities, hernia of the iris or ptosis. The affection occurs almost exclusively in the first four years of life. Unlike primary diphtheritic conjunctivitis, in which the early use of antitoxin usually effects a complete cure, diphtheritic conjunctivitis following measles does not readily yield to sero-therapy. Laugier attributes the failure of treatment to the profound intoxication of the organism which prevents it from reacting to the antitoxin. J. D. Rolleston.

Latent chorea in children (*'Thèses de Lyon,'* 1906–1907, *No.* 146).—**L. Mosnier.**—Latent chorea is most frequently found in those children in whose heredity figures a history of nervous disease, rheumatism, alcoholism or tuberculosis. The movements are ill marked but are very persistent. Relapses are frequent. Latent chorea may be a sequela of severe chorea, or, on the other hand, may develop into it. J. D. Rolleston.

Relapses in scarlet fever (*'Thèses de Paris,'* 1906–1907, *No.* 2).—**J. Lettry.**—Relapses in scarlet fever occur in about 1·5 per cent. of all cases, and usually between the fifteenth and thirty-fifth day. They are most frequent in children. Desquamation takes place earlier, the temperature is somewhat lower, and defervescence is more rapid than in the primary attack. Relapses must be distinguished from the erythemata occurring in convalescence from scarlet fever, which are usually accompanied by other streptococcal or pyæmic manifestations, from other eruptive fevers, *e. g.* measles, rubella, and the accidental rashes of smallpox and varicella, and from drug eruptions. The prognosis is good. Prophylaxis should be attempted by daily disinfection of the bucco-pharyngeal cavity during convalescence. J. D. Rolleston.

Stuttering—its nature, causes, and treatment (*'Med. Brief,' April,* 1908).—**Ibershoff** states that 0·7 per cent. of school-children are stutterers. It is distinguished from stammering by being based upon an abnormal mental condition, while the latter is a defect of pronunciation unaccompanied by hesitation. Stuttering arises during the period of speech development owing to faulty methods. At first the child is able to correct himself, but after a time this becomes impossible. The causes are violent emotions or acute diseases of childhood before the period of school life. The treatment comprises instruction in articulation and vocalisation, in rhythmical speech, regulation of the breathing and of the voice. This should be combined with avoidance of excitement and mental or physical over-exertion. He should never be punished for his defect, and he should be removed to a suitable school to receive instruction in correct speech.

J. Porter Parkinson.

"Blue baby"? aged 17 years ('*Montr. Med. Journ.,*' *March*, 1908).—**Viner** reports the case of a man, aged 17 years, who suffered from shortness of breath and weakness. He was five feet high and weighed 115 lb. There was clubbing of the fingers and toes, and thickening of the nose and ears. There was general enlargement of the heart, with a systolic thrill in the left interspace near the sternum, and a harsh systolic murmur heard best at the apex and propagated to the axilla; the first sound was obscured by the murmur, and the second sound increased at the apex, but diminished at the pulmonary. The condition was thought to be due to a patent ductus arteriosus, the faintness of the pulmonary second sound being accounted for by slight pulmonary stenosis. The prognosis is somewhat sinister owing to the fact that the heart has enlarged during the past two years and disturbance of compensation seems to be coming on. J. Porter Parkinson.

The patellar reflex in the lobar pneumonia of children ('*La Pediatria,*' *October*, 1907, *p.* 734).—**O. Cozzolino** gives the results of his observations on twenty-six cases. Westphal's phenomenon occurs frequently in the lobar pneumonia of children in all its stages. It is, however, irregular and uncertain in its appearance, and notwithstanding its frequency has no real diagnostic import, inasmuch as it does not occur exclusively in croupous pneumonia, but is seen, although less frequently, in other acute infections. Moreover, it often occurs late when other more definite signs have already made the diagnosis of pneumonia certain, and even when it occurs early it cannot be utilised for the diagnosis except when accompanied by other symptoms. Even in conceding a certain diagnostic importance to this phenomenon in the sense that only when accompanied by other more suspicious symptoms it gives an indication of greater probability to the diagnosis, it is certain that its value in such cases is not to be compared to that of the same phenomenon in tabes dorsalis. Vincent Dickinson.

The use of plasmon for children ('*La Pediatria,*' *October*, 1907, *p.* 773).—**Dr. Galichi** describes briefly sixteen cases, and is of opinion that plasmon is well tolerated by children of all ages, even though of feeble constitution, and does not cause any gastric or intestinal disturbance nor renal irritation even when given during convalescence from nephritis. It produces a remarkable improvement in the general condition of children and usually a marked increase in weight. Vincent Dickinson.

Persistent hereditary œdema of the legs with acute exacerbation ('*Quart. Journ. of Med.,*' *April*, 1908).—**Hope** and **French** report a remarkable instance of Milroy's disease, or persistent hereditary œdema of the legs, which occurred in thirteen individuals in one family, comprising forty-two persons, during five generations. The disease is characterised by a painless soft œdema of the legs, which comes on usually in childhood or adolescence and is persistent throughout life. The condition may end at the knee or involve the whole leg. The disease is almost always a family one and affects both sexes equally. In the family in question it was marked by repeated attacks of pain and swelling of one leg, with heat and redness of the skin, and usually a rise of temperature. These attacks generally began several years after the commencement of the œdema: they lasted only a few days and could not be attributed to bacterial infection. The disease is regarded as a vaso-motor neurosis, allied to Raynaud's disease and angio-neurotic œdema. T. R. Whipham.

Tumour of the pituitary body in a young boy ('*Neurolog. Centralbl.*,' *No.* 21, 1907).—**Eiselsberg** and **Hochwart** report the case of a boy, aged 12 years, who presented characteristic signs of a tumour of the pituitary body. Typical symptoms of acromegaly were absent and there were no congestive phenomena, but there was a rapid deposition of fat accompanied by symptoms resembling myxœdema. Examination by X rays further confirmed the diagnosis. An operation was undertaken for the purpose of improving the vision and relieving headache. By way of the frontal sinus and the sphenoidal sinus a cyst of the pituitary body was reached. A mass of broken-down tissue and blood was removed, in which a large number of epithelial cells were found. The patient completely recovered, and except for some loss of smell has continued in good health.

T. R. Whipham.

Anæmic pseudo-leukæmia infantum [Jaksch-Hayem] ('*Prag. Med. Wochens.*,' *April* 23, 30, and *May* 7).—**Furrer** understands by this cases of severe anæmia in early childhood, where, together with numerous normo- and megaloblasts there, is, concurrently, more or less leucocytosis. He describes two cases which answer this description; one was under observation from its ninth month till death when 5½ years old. The clinical history, the blood counts and the post-mortem findings are fully detailed. In this case the myelocytic and erythropoietic changes in the lymph glands and spleen were enormous. The second case occurred in a child, aged 14 months, who soon recovered. From a study of these cases and a review of the history he concludes that we are not dealing with a disease but with a "symptom complex" which can be the result of most divergent conditions, for instance, rickets, lues, gastro-intestinal troubles. These processes have a toxic effect upon the blood-forming organs and tissues, especially upon bone-marrow. The organs like the liver, spleen and glands retain their embryonic type, and their blood-formation must be likewise embryonic; this condition is most possible in early childhood when hæmopoiesis has not yet assumed its later more constant form. This conception is of some value in prognosis for it leads us not to consider the—symptomatic—blood-picture as of most value, but rather to seek the root-cause, as rickets, etc. We are thus placed upon the only sound therapeutic way.

M. D. Eder.

Epidemiology of diphtheria in the light of a possible relationship between the diphtheritic affections of man and those of the lower animals ('*Lancet*,' *April* 18, 1908).—**Sambon** states his belief that there is a relationship between the diphtheritic affections of man and those of the lower animals, which explains the epidemics of diphtheria more plausibly than any other theory. He describes the disease as it occurs in horses, cattle, sheep, hogs, rabbits, mice, cats, dogs, pigs, fowls and other birds, and the various epidemics which have occurred among these animals. He does not believe that it has been proved that the bacillus of animal diphtheria is a distinct type from that of human diphtheria, but he considers the bacilli described to be merely different strains of the same organisms. He considers that the various epidemics of diphtheria which have occurred in man in almost every case can be found to follow an epidemic among animals, and that the wild pigeon, which is particularly susceptible to the disease, is the cause of many epidemics which have occurred in man in England. MACLEOD YEARSLEY.

Pathology.

Researches on the blood of epileptic children (*'La Pediatria,' November*, 1907, *p.* 834).—**C. Mauro** publishes nine cases, and states that in epileptic children the hæmoglobin value and number of red corpuscles are about normal, but there is some leucocytosis, the form of which varies according to the stage of the disease and the time of making the examination. For instance, in children who have frequent attacks an examination made soon after one of them shows mononucleosis and hypo-eosinophilia, while in those in whom the disease is mild and attacks infrequent examination shows polinucleosis and hyper-eosinophilia. VINCENT DICKINSON.

Late ocular lesions of the Calmette-Wolff tuberculin reaction (*'La Presse Medicale,' March*, 1908, *No.* 22, *p.* 172).—**P. van Durme** describes yellowish-grey nodules on the bulbar conjunctiva resembling, but distinguishable from, ordinary phlyctenulæ. Whether they are tubercles is not demonstrable. They occurred five times out of forty-seven instillations, *i. e.* about 10·6 per cent. If they are tubercles, the technique followed and the preparation of tuberculin used should have an influence on the frequency of their production, the production of the lesions being more frequent when the solution of tuberculin is rich in specific cellular elements. The date of appearance of these lesions is variable, from 10 to 57 days in the five cases published. The lesion may occur even when the reaction has been negative, and therefore has no diagnostic significance. It seems, therefore, that the ophthalmo-reaction is not perfectly harmless, although by taking certain precautions, such as diluting the tuberculin to 1 in 200, too violent reactions are usually avoided. VINCENT DICKINSON.

Channels of communication in tuberculosis (*'Arch. of Pediat.,'* 1908, *vol.* xxv, *p.* 288).—**S. McC. Hamill.**—Congenital tuberculosis is exceedingly rare. Infection through the skin, ear, conjunctiva and uro-genital tract is also uncommon. In the great majority infection occurs through the respiratory or alimentary tracts, but Hamill thinks that intestinal infection is much commoner in children than infection through the lungs. Knowledge of the port of entry cannot be gained from the site or magnitude of the lesions. J. D. ROLLESTON.

The opsonic index in diphtheria (*'Journal of Infectious Diseases,'* 1908, *p.* 14).—**R. Tunnicliff.**—The opsonic index for diphtheria bacilli is usually subnormal at the beginning of the disease. When the membrane disappears the index rises considerably, and falls back to normal in from two to nine days. The injection of dead diphtheria bacilli into rabbits raises the opsonic power of the blood for diphtheria bacilli. This experiment is harmless, and Tunnicliff suggests that the injection of dead diphtheria bacilli may help to clear the throat of the bacilli in cases where they are unusually persistent. J. D. Rolleston.

Bacteriology of noma (*'New York Med. Journ.,' February* 1, 1908, *p.* 200).—**R. C. Rosenberger's** studies of six cases following measles and of one following typhoid fever confirm the observations of most investigators, who hold that the affection is not due to a specific micro-organism (*cf.* British Journal of Children's Diseases, 1907, p. 453). He thinks that noma is due to a symbiosis of a number of bacteria, the chief of which are Vincent's organisms. This view is supported by the fact that the disease is first manifested by a membranous or ulcerative process, in which the fusiform bacilli and spirilla are present in great numbers. When the process passes on to gangrene, other organisms, such as pseudo-diphtheria bacilli, strepto-, staphylo-, and pneumo-cocci appear. This later invasion is the cause of fatal toxæmia. J. D. Rolleston.

Therapeutics.

Intestinal lavages at a high temperature in entero-colitis of young infants (*'La Clin. Infant.,' April,* 1908, *p.* 217).—**Caravassilis,** of Athens, describes interesting details of his treatment by a rigorous diet and intestinal lavages at a high temperature according to the method adopted by Lesage, with the only difference that during the time of introducing the tube through the rectum into the cæcum and after its introduction, he does not hermetically close the anus with the finger, but lets the fluid escape freely by the side of the tube, which is withdrawn slowly before the fluid has completely flowed away. The duration of the lavage from beginning to end is about twenty-five minutes. Usually one lavage is given every twenty-four hours, rarely two, and then only when the illness cannot be otherwise controlled. The quantity of fluid for each lavage is about three litres. Of this, about a third is used at the moment of introducing the tube, one litre while it is stationary, and the remainder while it is being withdrawn. The temperature of the fluid is usually 40° to 43° C., and to make certain that it remains at the same level throughout the operation a thermometer is placed in the vessel and hot or cold water added according to requirement. The fluid consists of boiled water, rarely with salt added, or sometimes of very thin decoction of linseed. Of 38 infants attacked with entero-colitis, 27 were cured, 3 were benefited, and 8 died; in all these cases the hot lavages acted more or less effectually on the local symptoms. The colicky pains often yielded to the first lavage; the straining was definitely lessened, perhaps to reappear from four to twelve hours later, but rarely with the same degree of intensity, and they ceased after the fourth lavage; the stools also became rapidly modified. These lavages act with more efficacy when given at the commencement of the illness; the later the intervention the greater is the number required and the less their effect. In private practice the results obtained were better than in the clinic, due, probably, to the younger age and unfavourable surroundings of the latter. The best temperature for the fluid seemed to be 40°–42° C. These lavages at high temperature, besides assuaging thirst, raising the vascular tension, steadying the pulse and giving strength to the infant, have the further advantage of checking hæmorrhage and facilitating the introduction of the tube by means of the great heat of the liquid, which overcomes obstacles due to tetanic contraction of the rectum. VINCENT DICKINSON.

Ophthalmology.

A suggested mode of treating ophthalmia neonatorum ('*Lancet*,' *May* 2, 1908).—**A. Nimmo Walker** refers to the unsatisfactory nature of the treatment of this disease at the present time. His mode of dealing with the disease is as follows: Births, on being notified, lead to the infant being visited by some responsible person, who, on finding the eyes affected, applies to a doctor or has the child removed to hospital. There it is seen by one of the surgeons, and if necessary detained, while the health authorities are asked to send an ambulance to bring the mother. Mother and child are then put into a special ward and attended by a special nurse. This ward is really a nursery containing a number of cots, and is in charge of a special nurse who is not allowed to touch uninfected cases. The results of this experiment have been very encouraging, and may lead to a diminution in the number of preventable cases of blindness if more generally adopted.

JAMES BURNET.

Otology, Laryngology and Rhinology.

Interference with laryngeal and œsophageal function by an enlarged thymus ('*Berl. klin. Wochens.*,' *April* 27, 1908).—**Hinrichs.**—The case of an infant, aged 10 weeks, is reported. Signs of laryngeal and œsophageal obstruction developed, the most marked being regurgitation of food. A diagnosis of enlarged thymus was made, as substernal dulness was increased, and a tremor felt above the sternum when the child's head was thrown far back. Part of the thymus was removed, with relief of symptoms and general improvement. This is the eighth operation of the kind reported. Hinrichs lays stress upon the fact that as much as possible of the gland must be left *in situ*.

MACLEOD YEARSLEY.

Removal of the tonsil in capsule ('*Boston Med. and Surg. Journ.*,' *April* 16, 1908).—**Heffernan** asks why, if it is the general rule in surgery to remove as much diseased tissue as possible, there should be any hesitation in the case of the tonsil. Complete removal of the tonsil is the only way by which immunity from infection through the sinus tonsillaris can be obtained. The author's own method is described.

MACLEOD YEARSLEY.

Complete occlusion of both anterior nares ('*Montreal Medical Journal*,' *March*, 1908).—**Craig.**—This case, a female, aged 2 years and 8 months, is described. According to the mother's statement the child had been unable to breathe through the nostrils for two years, although at birth she could do so freely. No evidence of rickets or inherited syphilis. The nose was flat and saddle-backed and both anterior nares were covered by epidermis like the surrounding skin. Post-nasal space and pharynx free. Operation, under a general anæsthetic, consisted in vertical incision through the centre of the skin plates obstructing the nostrils. The turbinals were found large and were reduced by operation. Silk rubber tubes were inserted. In six months the result was excellent. This is the only case of complete closure of the anterior nares by cutaneous membrane reported.

MACLEOD YEARSLEY.

Surgery.

Cystitis due to the colon bacillus in infancy (*'Il Policlinico,' May*, 1907).—**Valagussa** reports eleven cases, seven in girls and four in boys. The ætiology of the disease is still obscure, though the ascending route through the urethra is probably the commonest mode of infection. Spread of the infection from the bowel by means of the circulation is, however, admitted, and has been demonstrated by animal experiments. The severer forms of cystitis are found in children from a few months up to three years of age, and are characterised by high remittent and intermittent fever, a serious disturbance of the general health and a protracted course. The milder forms occur between the ages of five and eleven. In these the general health is but little affected, the fever is moderate or even absent and the duration is short. The importance of this cystitis in early life is greater than is usually recognised, numerous febrile affections with a protracted course and uncertain diagnosis being referable to infection of the bladder with *B. coli*. The true state of affairs can only be determined by a microscopical and bacteriological examination of the urine. The treatment is symptomatic. Diuresis should be effected by the administration of mild mineral waters, and helmitol may be given in very small doses. In chronic cases washing out of the bladder with a 1 in 4000 solution of potassium permanganate may prove useful. T. R. Whipham.

Renal sarcoma in infancy (*'Arch. of Pediat.,' vol.* xxv, *p.* 273).—**W. F. Cheney** records a case in a boy, aged 22 months. The mother had first noticed a lump in the right side of the abdomen two months previously. Rapid growth took place. There was no vomiting or pain. The urine was normal. There was no fever nor leucocytosis, but moderate secondary anæmia. The right kidney was removed in June, and the child remained well till September, when a recurrence appeared at the site of operation. Death occurred in December preceded by vomiting and emaciation. Sarcoma in children is rare. No case was found among 2260 patients under 12 years at the Children's Clinique at Cooper Medical College. The symptoms are few. The tumour grows rapidly, does not produce cachexia till it is very large, causes little or no pain or constitutional disturbance, and is usually first discovered by accident. J. D. Rolleston.

Correspondence.

To the Editor of The British Journal of Children's Diseases.

Sir,—Dr. Ernest Jones, in his very interesting article, "Symptoms and Diagnosis of Juvenile Tabes" (this journal, April number), says (p. 132): "The most important gap in our knowledge of the subject at present is the fact that no diagnosis of juvenile tabes has yet been confirmed by autopsy."

Referring to that, I beg to state the following fact, that Köster has already described in 1905 a case of juvenile tabes, which has been fully confirmed by autopsy and microscopical examination.

I am, Dear Sir, yours faithfully,
Dr. Hermann Netter.

Bleichstrasse 9, Pforzheim, Germany,
September the 19*th*, 1908.

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CERVICAL AND SUBMAXILLARY ADENITIS IN CONVALESCENCE FROM DIPHTHERIA.

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The occurrence of cervical and submaxillary adenitis in the absence of any faucial inflammation is a well-recognised sequela of scarlet fever. Little attention, however, has been paid to a similar phenomenon in convalescence from diphtheria. Before the introduction of antitoxin in 1894 Cadet de Gassicourt and Sanné are the only writers, to my knowledge, who mention it. More recently certain French writers have noted it (Deguy, Granchen, Boulloche and Babonneix, Ruault, Sevestre, and Martin).

The statistics of the Metropolitan Asylums Board fever hospitals since 1903, in which year this complication was first recorded, yield a total of 636 cases of secondary adenitis in diphtheria, or an annual average of 2·58 per cent. These figures, however, are somewhat misleading as to the time frequency of late adenitis in diphtheria, since these 636 cases comprise those in which adenitis is due to serum as well as those in which this factor can be excluded. Though overlooked in most text-books of medicine the occurrence of adenitis of the cervical and submaxillary glands was noted in the earliest papers on the use of antitoxin in diphtheria (Adolph, Baginsky, Barth, 'Clinical Society's Report,' Cnyrim, Daut, and Zielenziger). Of recent years attention has been drawn to it by Bourlier, Coldefy, Currie, Deguy and Deilh, Goodall, Pirquet and Schick, and myself.

To determine the true frequency of late adenitis in diphtheria and to distinguish adenitis due to serum from that not so caused, I have been led to analyse 1530 cases of diphtheria, which I have been able to follow throughout their illness at the Grove Hospital in the course of the last six years: 1472 of the 1530 were injected with antitoxin. Adenitis of the submaxillary and cervical glands arising after subsidence of the acute attack and not secondary to faucial inflammation was noted in 147 cases, or 9·6 per cent. In 133, or 9·03 per cent., of those injected the adenitis was associated with other serum phenomena, such as rashes, pains in the joints or muscles, and pyrexia. In all but seven cases, in which the rash was urticarial, the associated eruption was a circinate erythema. In 111 the fauces were quite normal, but in 22 angina redux existed. This condition is a faucial exanthem corresponding to, and contemporary with, the cutaneous efflorescence, and is not the cause of, but merely co-exists with, the adenitis.

Pirquet and Schick have pointed out that enlargement of the inguinal glands in the neighbourhood of the injection is one of the earliest signs of the serum disease, and, as a rule, precedes the eruption of urticaria, the usual onset of which is a week from injection. Enlargement of the submaxillary and cervical glands, however, does not, as a rule, take place till later, and is then accompanied by other late serum phenomena. Thus only 4 of my cases of serum adenitis occurred within the first week from injection, whereas 99 were noted in the second week, and the rest later.

The following table shows the frequency of serum adenitis in relation to the other symptoms of the serum disease among the 1472 injected cases.

	Cases.	Percentage.
1. Urticaria	978	66·4
2. Circinate erythema	279	18·9
3. Pyrexia	239	16·2
4. Pains in joints and muscles	137	9·3
5. Cervical and submaxillary adenitis	133	9·03
6. Angina redux	53	3·6

Serum adenitis is more frequent after a severe than after a mild initial angina, as is shown by the following figures:

	Cases of serum adenitis.	Percentage.
Severe angina	67	11·9
Moderate angina	36	9·8
Mild angina	30	5·6

One may, therefore, conclude that severe diphtheria, which is accompanied by greater adenopathy than milder forms, and in which the lymphoid tissue consequently forms a *locus minoris resistentiæ*, predisposes to serum adenitis.

It is interesting to note that in scarlet fever the connection between the initial angina and the secondary adenitis is not so close, since in 81 per cent. of Dr. W. Hunter's cases of late adenitis the initial angina was only slight or moderate.

Unlike the other variety of adenitis, which, as my figures show, is confined to young children, serum adenitis is met with at all ages, and shows only a slight decrease in frequency with advancing years. Thus the percentage of cases during the first quinquennium was 9·8, during the second 8·7, during the third 6·2, and from the age of 15 to 59 there were 7 cases, or 5·3 per cent.

Complete resolution is the rule in serum diphtheria. Chronic hyperplasia was not noted. In only four did suppuration occur. This infrequency of suppurative adenitis is characteristic of diphtheria. In only 5 cases, or 0·3 per cent., of the present series of 1530 cases did the initial adenitis end in suppuration. In 14 cases, or 0·91 per cent., the cervical and submaxillary adenitis was not associated with serum manifestations, but occurred at periods varying from eight to twenty-eight days from the last appearance of any serum phenomena. The average date was the twenty-eighth day of disease and the sixteenth from the last appearance of any serum phenomenon.

Late adenitis, as this variety may be termed to distinguish it from the serum adenitis just described, does not appear to have any relation to the character of the initial angina, since it occurred somewhat more frequently after a mild than after a severe initial attack. Thus 5 cases, or 0·8 per cent., were noted after severe; 1, or 0·5 per cent., after moderate; and 8, or 1·5 per cent., after mild angina.

The duration of late adenitis varied from a few days to a fortnight. The temperature ranged from normal to 103·8° F. The degree of constitutional disturbance never reached that frequently seen, even in the absence of nephritis, in association with the secondary adenitis of scarlet fever.

In each of the 14 cases the fauces were normal. Tonsillitis, as I have shown elsewhere, may arise in convalescence from diphtheria. In the present series it occurred in 48 cases, or 3·1 per cent. All were accompanied by some degree of adenitis, but as it was secondary to the faucial condition, the adenitis in these cases has not been added to the other cases of late adenitis.

In 10 of the 14 cases complete resolution took place. Suppuration occurred in 3. One boy still showed some glandular enlargement at the time of his transfer to a convalescent hospital. Since, as already stated, all the cases of serum adenitis completely resolved, it is obvious that chronic hyperplasia, not uncommon after scarlet fever, is a rare termination of the secondary adenitis of diphtheria.

In striking contrast to the late adenitis of scarlet fever which is so often associated with nephritis, only two cases had albuminuria, in one of which the albumin had persisted since the beginning of the disease.

The foregoing figures show that if we exclude the serum disease from the pathogeny, adenitis in convalescence from diphtheria is comparatively rare. In scarlet fever, on the other hand, late adenitis occurs with a frequency varying from 6·38 per cent. ('Metropolitan Asylums Board Reports'), or 7·2 per cent. (Schick) to 19 per cent. (W. Hunter).

The cause of the much greater frequency of adenitis in scarlet fever is doubtless to be sought in the fact that secondary infection, mainly streptococcal, which, according to general consent, is responsible for the sequela, plays a much more important part in scarlet fever than in diphtheria. The frequency with which abscesses occur at the injection site when serum of any kind has been given, and the difficulty of controlling sepsis in a tracheotomy wound in scarlet fever as compared with diphtheria, are noteworthy examples of the much greater tendency to secondary infection in scarlet fever.

It is remarkable that all the cases of late adenitis occurred in children whose ages ranged from one year and eight months to five years. Although 729 of the 1530 were above the age of five years, no case of late adenitis was observed above that age. The exclusive occurrence of this complication in young children is explained by the richer development and greater vulnerability of lymphoid tissue at this age, especially when the natural resistance of the tissues has been diminished by the initial attack.

Diagnosis.—The diagnosis of serum adenitis is readily made by the co-existence of other characteristic serum phenomena.

Before making the diagnosis of late adenitis one must exclude any faucial condition, such as tonsillitis or a relapse of diphtheria. In some cases an acute exanthem, especially scarlet fever, is preceded by submaxillary or cervical adenitis, so that the diagnosis of a late primary adenitis must not be too hastily made.

Prognosis.—Unlike the initial adenopathy of diphtheria, in which considerable glandular swelling is an unfavourable sign, the adenitis of convalescence has no untoward significance. All but one of the 147 recovered. In 47 of the serum adenitis cases paralysis occurred, two of which were severe, and three of the late adenitis cases had mild paralysis.

Treatment.—Beyond the application of fomentations to the neck and incision when suppuration occurs no special treatment is required.

Summary.

(1) Adenitis of the submaxillary and cervical glands in convalescence from diphtheria may occur either as a serum phenomenon, or much less frequently and at a later date independently.

(2) Serum adenitis is more frequent after severe than after mild angina. Late adenitis bears no relation to the initial attack.

(3) Serum adenitis may occur at any age. Late adenitis is confined to young children.

(4) The late adenitis of diphtheria, unlike that of scarlet fever, is not associated with nephritis nor considerable disturbance of the general condition.

(5) Complete resolution is the rule; suppuration is exceptional; chronic hyperplasia is still more uncommon in either variety of secondary adenitis.

(6) Serum adenitis is recognised by the presence of other serum phenomena. In the diagnosis of late adenitis, tonsillitis, a relapse of diphtheria or the onset of an acute exanthem must be excluded.

(7) Adenitis in convalescence from diphtheria, unlike that accompanying the initial attack, has no prognostic significance.

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THE TREATMENT OF CHOREA.

By James Burnet, M.D.Edin.,

Physician at the Marshall Street Provident Dispensary and Registrar Royal Hospital for Sick Children, Edinburgh.

Chorea is essentially a rheumatic manifestation. Its origin has been variously explained by pathologists and others, but all are agreed that choreic movements are the outcome of rheumatism. Personally I am inclined to regard these movements as being merely an exaggeration of the natural restlessness of rheumatic children. The rheumatic child is essentially nervous, ever on the move, never still, and constantly seeking some new form of amusement. When to this nervous unrest muscular movements become superadded, we have the condition known as chorea established. Then, again, the associations of chorea are all of a rheumatic nature. I have seldom seen a case of chorea in which there was not present more or less dilatation of the heart. The presence of valvular lesions is well recognised, apart from dilatation of the organ. Other concomitants and sequelæ need not further be referred to here, except perhaps psoriasis, which I am inclined to believe is always a rheumatic manifestation in children. I have observed its occurrence in cases of chorea, and Dr. Porter Parkinson[*] has "not noticed psoriasis in association with any other disease nearly so frequently as with rheumatism."

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[*] 'Reports of The Society for the Study of Diseases in Children,' vol. vii, p. 32.

. If we admit, therefore, that chorea owes its origin to rheumatism, then we must base our treatment on this assumption. Curiously enough, however, this is not by any means always done, as we shall presently see. The mode of treatment of chorea at present generally favoured by the profession is by means of arsenic. The liquor arsenicalis is given in gradually increasing doses until ten minims or more thrice daily are reached. One writer states that small doses are of no value whatever in the treatment of chorea. How does arsenic act in bringing about the cure of chorea? We can only answer, by poisoning and probably paralysing the nervous system. Arsenic in large doses is very apt to cause neuritis, and by doing so checks the movements associated with this disease. Even if it does not actually produce a neuritis it causes some preliminary condition in the nerves which leads to a cessation of the choreic movements. This, I admit, is theoretical, but it offers the only rational explanation of the therapeutic value of arsenic in this disease. Otherwise we must look upon the remedy as a merely empiric one. The fact that large doses are necessary seems to bear out my contention. Small doses do not readily produce neuritis; large ones may, and often do. I can never forget a case of chorea which I once saw. The child had been treated for several weeks with ten-minim doses of Fowler's solution thrice daily. The choreic movements had completely ceased, but the patient, when she attempted to walk, had considerable difficulty and stiffness of movement. The knee-jerks were very sluggish. This was said to be due to prolonged treatment in bed, but I am more inclined to regard these manifestations as the result of a mild form of arsenical neuritis. If this be so then arsenic should not be used for the treatment of chorea if a better remedy can be found.

Moreover, arsenic has no power in preventing or remedying the complications and sequelæ of chorea. In other words, it does not influence the rheumatic constitutional tendencies which lurk behind the choreic manifestation. Further, the cure is never a permanent one. I have over and over again seen cases treated by means of arsenic, showing a relapse often within a very short time after the administration was stopped. Quite recently a child was brought under my notice who had been taking five-minim doses of liquor arsenicalis, and who remained free from choreic movements so long as she was given the medicine, but who developed them again within a week after the drug had been left off. Permanency of cure, therefore, can never be guaranteed under the arsenic therapy. To sum up, then, my objections to the use of arsenic in the treatment of chorea, these may be stated as follows:

(1) Large doses have to be given, and these may induce neuritis.

(2) The results achieved are rarely permanent.

(3) Arsenic exercises no influence over the complications and sequelæ of chorea.

(4) It does not benefit in any way the rheumatic constitution of the patient.

Taking all these facts into consideration, we are bound, I think, to look about for some remedy which will cure the chorea and at the same time be free from bad effects, as well as influence the constitutional tendencies to which the attack of chorea is due. We do not require to go far for such a remedy. In the salicylate group we find one which I shall endeavour to prove is of infinitely greater value than arsenic in such cases. We have said that chorea is essentially a rheumatic affection. If this be so, then surely the logical outcome is to give some anti-rheumatic agent as the remedy. Chorea is merely a group of symptoms, but a manifestation of rheumatism. We have, therefore, first of all to treat the constitutional disease. To treat merely its symptoms is to go but half way. Phenacetin will cure headaches in many cases, just as arsenic will check choreic movements, but neither drug touches the condition which is the *fons et origo* of the symptoms. We must dig deeper if we desire to seek out the source of pollution. The real cause remains operative even when the choreic movements have ceased, and these, or some other rheumatic symptom-complex, may be met with in the same patient at any future period.

Arsenic therapy is not scientific treatment in such cases. I maintain that the salicylate method is, for it acts upon the rheumatic constitution beneficially and tends to eradicate the specific poison from the blood. It has been urged against the salicylates that they do not cure rheumatism. This is, I think, going too far. We may, of course, on the same line of argument, maintain that mercury does not cure syphilis, nor quinine malaria. It must surely be admitted that the salicylates cure rheumatism as far as cure is possible, humanly speaking. Another objection to salicylates is that during their administration epistaxis has been observed, but I am inclined to think that in most, if not all, of these cases either mitral regurgitation was present or else that an impure preparation was employed. I have also met with epistaxis in rheumatic children who had no cardiac lesion, and who were not at the time taking any drug. We are not, therefore, entitled to regard epistaxis coming on during administration of salicylates as due to the effects of the drug.

The great advantage which salicylate of soda possesses over arsenic in the treatment of chorea is that it goes a long way towards preventing a recurrence. This has been my personal experience, and I see no reason to alter my views regarding this important point. Certainly, so far as my own observations go, choreic patients treated by means of arsenic are far more liable to have a recurrence of the attack than those who have been under the salicylate treatment. This is likewise the experience of Dr. Cecil B. Wall* who states that "relapses are certainly no more frequent, and possibly even less frequent, than with any other form of treatment." He found that arsenic was of little value. This coincides with the view of Dr. Guthrie,† who could never satisfy himself that it did any good whether given by the "intensive" method or in large doses.

Shortly after the introduction of aceto-salicylic acid I treated several cases of chorea by this drug, and presented my results in 1905 to the Therapeutical Society. Its advantages over salicylate of soda are many. It has a less nauseous taste, and has less tendency to depress the heart. I have, therefore, discarded altogether salicylate of soda in the treatment of chorea and use only aceto-salicylic acid. It must be borne carefully in mind that alkalies, such as sodium bicarbonate, must not be given along with this remedy, as in the presence of dilute alkalies aceto-salicylic acid becomes rapidly disintegrated. It is best given, as I originally suggested, suspended in a glass of lemon-water. It may, however, be given in cold milk or in cachets. The tablet form of administration is valueless. These tablets not infrequently pass through the gastro-intestinal canal without becoming disintegrated. Dr. Cecil Wall, in the paper already referred to, says: "I have generally found that, as Dr. Burnet recommended, the drug is best given in powder form stirred up with cold milk when the stomach is full. It may, however, be given in cachets, or suspended in mucilage." Of fifty cases treated by him by means of aceto-salicylic acid all recovered in less than three months, and 98 per cent. in less than two months, while 74 per cent. were pronounced cured in one month or less. Of 165 cases treated by arsenic only 69 per cent. were cured in less than three months, and only 38 per cent. in less than two months. These results, of course, are greatly in favour of the salicylate method of treatment, and practically coincide with my own observations.

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* 'Therapeutical Society's Transactions,' 1907, "On the Value of Certain Drugs in the Treatment of Chorea."

† 'Proceedings of the Royal Society of Medicine,' vol. i, Therapeutical Section, p. 77.

As to the dosage of aceto-salicylic acid I originally recommended 5 gr. as an average amount, but stated that in many instances I had given as much as 10 gr. without any bad effects and with considerable benefit to the patient. Dr. Cecil Wall, writing two years later, advises larger doses. He says: "At first I was content to use small quantities, but I soon found that children, as a rule, are tolerant of the drug, and that better results are obtained when large doses are given. I now give to a child, 6 or 7 years of age, 10 gr. thrice daily; from 8 to 10, 10 gr. four to six times daily; from 11 to 14, 15 gr. three to six times a day; and over 14, 20 gr. three to six times a day. To a child of 3 I have given 20 gr. every two hours for six doses, followed by 20 gr. three times a day, with a good result." I am not, however, prepared to advise such large amounts in ordinary cases. I find that it is rarely necessary to exceed thirty grains a day, if the other accessories to the treatment, as presently to be referred to, are, at the same time, carried out. It is only fair to remark that Dr. Guthrie deprecates the use of this or of any other form of salicylate almost as much as he does that of arsenical preparations. Some authorities, as is well known, urge the use of large doses of salicylates in the treatment of rheumatic affections, and, so far as salicylate of soda is concerned, I think it is necessary to give large doses in cases of chorea if any good result is to be expected. Five-grain doses are utterly useless. Ten grains is the minimum, and much larger amounts may be given with advantage. I do not advise the admixture with bicarbonate of soda as advocated so strongly by Dr. Lees. I have on several occasions, not necessarily in choreic cases, found that this combination has given less satisfactory and less rapid results than when the salicylate of soda was administered alone.

The treatment of chorea, however, by drugs alone is not satisfactory. More is required if we are to obtain anything like satisfactory and lasting results. The patient should in all cases remain in bed. The ideal diet is milk alone. This, however, it is practically impossible to enforce. Accordingly we may order in addition to milk—not, however, as substitutes be it remembered—milk puddings, with stewed fruit by way of variety, and occasionally chicken soup, fish, and chicken. A most important part of the treatment is massage of the limbs, either by the attendant or by a trained nurse. Massage, however, should always be carried out under medical supervision, as I have frequently found that trained nurses are apt to overdo it, if they do not carry it out badly altogether. Massage has in many cases a truly marvellous effect. It strengthens the muscles and materially soothes the nervous excitability of the choreic patient. Whenever possible massage should therefore be recommended. An occasional dose of calomel is also of advantage. In fact no day must be allowed to pass without an evacuation of the bowels, as constipation always aggravates the condition.

In most, if not all, cases of chorea there is present a greater or less degree of cardiac dilatation, and this fact alone necessitates prolonged rest in bed. Apart from this the treatment of the patient during the convalescent period is of the utmost importance. It is during this time that mistakes in treatment are very liable to be made. It is no uncommon experience to find that all drugs are stopped as soon as the patient is able to be about again. My own practice is to give small doses of the salicylates morning and evening for at least a month or six weeks after I have allowed the child to get out of bed. Return to school must not be permitted within at least three months. If possible, and the weather is suitable, the child should be sent away to the sea-side for a change. The sea air seems to benefit choreic patients more than that of inland health resorts. The heart should be examined by the medical attendant at intervals, and certainly once a year during the school age. The parents should in every case be told that chorea is but a manifestation of rheumatism, and that at any time the patient may suffer from an acute form of this disease or from some heart affection. As a rule chorea is looked upon by parents and schoolmasters as a nervous complaint, and its real significance is entirely disregarded unless it is brought into prominence by the medical attendant.

I have merely touched on one or two points regarding the treatment of chorea, but perhaps sufficient has been said to indicate the unscientific nature of arsenic therapy and the necessity for supplementing the salicylate treatment in the manner indicated. I am convinced that at the present time chorea is treated in a very half-hearted way by most practitioners, who, because they regard the condition as one easy of diagnosis (which is not always the case), are apt to prescribe arsenic in a mechanical fashion, just as they do digitalis for heart disease. This method of treating chorea is sure to lead to disaster, because it is as pernicious as it is unscientific. On the other hand, if we are guided by some principle in the treatment we adopt we may confidently expect successful results.

ON TWO CASES SUGGESTING RELATIONSHIP TO STATUS LYMPHATICUS.*

By Otto Kauffmann, M.D.Lond., M.R.C.P.,
Physician at the Queen's Hospital, Birmingham.

The cases which I am bringing to your notice are examples of Hodgkin's disease and of splenic anæmia, and I wish to elicit a discussion on the relationship between status lymphaticus and those diseases. The first case is that of a school-girl, aged 12 years, tall, slim, pale, but well grown, very intelligent, and with fairly good muscles. She entered the hospital in the early part of this year. There were enlarged lymph-glands on both sides of the neck, both supra-clavicular regions and both axillæ, but none in the groins. The glands were of the size of hazel-nuts and discrete, except in the right axilla, where a large soft swelling underlay the bulging pectorals, and obscured the individual lymph-glands. There was enlargement of the area of splenic dulness, and when she first came into hospital the spleen was doubtfully palpable, but it soon became obviously so. It, however, never exceeded two inches below the left costal arch. She had no internal pressure signs; the blood looked pale, but showed no marked departure from the normal on microscopic examination.

I think the case may fairly be called one of Hodgkin's disease. The teeth in both jaws were very carious, and the breath smelt foul. Her temperature was not steady; it rose to 101° F. and sometimes even to 102° F., but for a week before her discharge in April the temperature was again normal. Except for the improvement to her general health from rest and good food I did not trace any benefit to treatment. The glands did not vary much in size. She did not react to the Calmette test, and there were no signs suspicious of tuberculosis in any part of the body. From February the 27th to March the 11th she was taking iron continuously, but neither the hæmoglobin nor the red cells improved. The counts† were all made at the same hour of the day. From March the 11th to the 31st she was on liquor arsenicalis ♏v three times a day. Her red corpuscles then rose a little, the white ones fell a little, and the hæmoglobin improved. From March the 31st to April the 22nd she had mercurial inunctions, and the white corpuscles fell a little as also did the red ones. The treatment was changed from arsenic because her general health did not seem so good as I hoped would be the case under arsenical medication.

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* Read at the Provincial Meeting held at the Children's Hospital, Birmingham, Saturday, June the 20th, 1908.

† See table.

Blood Counts of the First Case.

	Red blood-corpuscles. Per c.mm.	White blood-corpuscles. Per c.mm.	Hæmoglobin. Per cent.	
Feb. 29	3,600,000	9,000	65	Feb. 27—March 11, iron.
March 11	3,200,000	14,000	65	March 11—31, liquor arsenicalis ♏v.
April 7	4,370,000	8,000	70—80	March 31—April 22, unguentum hydrargyri.
„ 11	3,500,000	6,000	70	
June 16	3,760,000	13,408	75	

The other case was that of a girl, aged 21 years, who died. Her case might be regarded either as one occupying an intermediate position between splenic anæmia and Hodgkin's disease, of the type associated with enlargement of the spleen, or as one of Hodgkin's disease proceeding to severe anæmia. Multiple hæmorrhages and an acute inflammation of the larynx with œdema, necessitating intubation, set in, finally killing the patient by exhaustion. The first thing noticed was enlargement of the spleen, which, even on admission, was very big, and which, post mortem, reached across the mid-line and down into the false pelvis. After death many petechiæ were found on the heart and pericardium. The thymus was normal, but the lymph-glands all over the body were greatly enlarged, without caseation, although in the lungs there were old tubercular foci. The liver was congested, with round-celled infiltration of the interlobar spaces. The spleen was enormous, and there was much perisplenitis. The kidneys showed round-celled infiltration, particularly of the cortices. There was poikilocytosis, but there were no macrocytes. The blood count on admission was 2½ millions red corpuscles and 7000 white corpuscles per c.mm. The hæmoglobin index was slightly over 1. The treatment by arsenic showed only an evanescent improvement. None of the drugs tried materially altered the condition of the blood.

My object is to draw attention to the very probable connection between these cases and the condition which has been called status lymphaticus, or status thymicus. Probably members have seen at the General Hospital the beautiful specimens which Dr. Wynn had placed there, showing the changes met with in that disease. I should

Blood Counts of the Second Case.

	Red blood-corpuscles. Per c.mm.	White blood-corpuscles. Per c.mm.	Hæmo-globin. Per cent.	
Feb. 4	2,560,000	7,190	80	Feb. 3—9, Liq. Fowleri ♏v.
„ 17	2,800,000	8,100	—	Feb. 9—March 1, Liq. Fowleri ♏x.
„ 26	3,300,000	6,000	—	—
March 1	3,100,000	6,600	85	March 1—27, iron and arsenic.
April 1	—	2,600	—	March 27, nuclein.
„ 4	—	3,200	—	—
„ 5	—	4,200	—	—
„ 7	—	4,800	—	—
„ 8	2,568,000	3,200	60	—
„ 13	—	4,800	—	—
„ 17	—	5,400	—	—
„ 22	2,552,000	7,200	60	April 22, nuclein stopped.
May 4	1,860,000	7,400	50	—
„ 8	—	9,600	—	—
„ 19	902,000	14,400	—	—

like to discover whether it is the general experience that the status lymphaticus is apt to develop into Hodgkin's disease or some other form of pseudo-leukæmia. I suppose that in all cases the definition of status lymphaticus involves necessarily a hypertrophied thymus. There was no such hypertrophy in the fatal case. Still, it presented the general picture of that disease, and I cannot help thinking that there is so intimate a relationship that a case of status lymphaticus might pass into one of Hodgkin's disease, and that, as the second case shows, that condition may proceed to intractable anæmia.

SOME FACTORS IN THE CAUSATION OF THE NEUROSES.*

By Walter Jordan, M.D.,
Physician at the Children's Hospital, Birmingham.

In making these brief remarks on the causation of the neuroses I have in mind the general neurotic condition to be observed in so many children, characterised by restlessness, timidity, irritability, tearfulness, moral delinquencies and such rather than the more definite neuroses such as enuresis, asthma or tetany. Whatever circumstances lead to the development of these states must obviously be either pre-natal, natal, or post-natal. Accidents of birth cause gross lesions rather than neuroses, while of pre-natal influences all but a very few are hereditary. I wish to speak first of the hereditary factor in the causation of the neuroses, and, to come to the point at once, to ask whether we are not inclined to attribute too much importance to it, to regard its presence as proved often on very slender evidence, and even to assume it where there is no direct evidence whatever of its existence. The better educated of the laity are absolutely obsessed by the hereditary explanation of nervous and mental affections, and a considerable section of the medical profession is at one with them on the point. I do not want to be misunderstood; I admit the supreme importance of hereditary influences in many cases of neurotic children. It were foolish to go to an opposite extreme and refuse to credit the theory of ancestral failings at any time, but one may ask, is it not overdone, and—for here is the practical point—has it not sometimes so engrossed attention that post-natal circumstances, still active, and possibly capable of modification, have been overlooked, with the result that treatment has had to remain vague and general, when it might have been direct? For the essential drawback of the hereditary theory of causation is that while it emphasises the necessity for careful treatment it supplies no clear indication how to treat. When we are face to face with a neurotic child, the statement that treatment should have begun two generations back, however picturesque as phrase-making, is discouraging as doctrine. In support of my case I would point out two things; first, that it is not always easy to say whether certain parental attributes are to be regarded as factors of heredity or of environment. A neurotic child has a drunken father. Would it have been neurotic had it been taken from him when a week old? What of the anxiety, the fear, the broken sleep, possibly the physical injury? Or a neurotic mother has a neurotic daughter; again, what might have been the effects of another than the maternal upbringing? The second point is that, even with fairly intelligent parents, it is by no means easy to get a trustworthy history of the infancy of the children of 5 or 6 years of age whom they bring to you. Even if they observe them they do not know the significance of the ailments of babyhood. So much of what happened in the first eighteen months of life is lost to mind, and the origin of many a neurosis is "wropt in mist'ry." Two questions may be put: the one,

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* Read at the Provincial Meeting held at the Children's Hospital, Birmingham, Saturday, June the 20th, 1908.

Is the nervous system of any child so congenitally defective that, in spite of proper treatment and education from the first, the child must grow up neurotic? The answer to which I believe to be, Yes, but apart from actual imbeciles, of very few. Next, Is the nervous system of any child so congenitally perfect that no illness or error of training can render it neurotic? The answer to which I believe to be, No. Both these answers, if correct, emphasise the importance of the post-natal causes of neurosis, turning to which I select two as being extremely common, and often overlooked or under-rated. The first is habitual constipation in infancy or childhood. We ourselves are well aware of the evil effects of this condition on the nervous system amongst others; but the difficulty is to get parents to recognise that it is a condition which calls for careful continuous treatment at skilled hands, instead of the spasmodic domestic administration of drastic purgatives or inefficient laxatives. I fear that occasionally even members of the profession, when the point of a youngster's habitual constipation is referred to them, instead of insisting on the necessity of a deliberate and ordered campaign of treatment have been content with a hasty recommendation to try something or other. The condition favours the development of neuroses, not only directly by the action of toxins absorbed from the alimentary canal on the neurons, but in many indirect ways. Thus the constipation of breast-fed babies too often leads to their being taken from the breast under the misapprehension that their discomforts are due to the quality of the breast-milk. Launched, then, on the perilous sea of artificial feeding, they are exposed to the further risk of starvation of the neurons from an insufficient supply of building material. Or again, pain may prevent sleep, and continued loss of sleep is in itself enough to account for much neurosis.

Habitual constipation is generally known to be present, even when it does not receive the attention and treatment it deserves, but there is a causal condition of neuroses which is quite frequently entirely overlooked. I refer to septic tonsillitis of the follicular or lacunar type, which for some reason or other, even when it causes marked enlargement of the tonsils, frequently gives rise to no pain or difficulty in swallowing, with the result that no complaint of sore throat is made by the child and the condition goes untreated. It is quite common in infants, who are, of course, unable to point out the seat of mischief. What does arouse attention is the accompanying adenitis, affecting glands about the angle of the jaw. When this glandular enlargement is great it is not uncommonly mistakenly diagnosed by parents as mumps, and an expectant attitude adopted. If the adenitis is slight or escapes notice, the only thing that will lead to the child's being brought for treatment is severity of the ensuing general debility or the appearance of some more definite sequela, which may be a functional nervous disorder such as enuresis. No condition is more liable to become chronic or more prone to recur than this variety of tonsillitis, and the injury done to the general health of children by it is incalculable. It is at the back of a great deal of the nervousness, naughtiness, and irritability for which so many children are brought to us that we may say whether "they can help it," or whether there is something really wrong with them.

I do not propose to deal with any other of the post-natal causes of neuroses. Rickets and rheumatism as causes of neuroses in childhood are well known to every one of us through literature and from personal experience. They suffer from no disregard. Over-pressure in education is also the subject of vigilant inquiry; even in infancy over-pressure has been reported as a cause of a neurotic condition where parents, over-proud of the way in which their babe takes notice, have absolutely exhausted it with an incessant stream of more or less dazzling stimuli. And there are yet other causes. But I have selected these two, because I believe that in the one case the invasion of toxins from the throat is quite frequently overlooked, and that in the other the toxic and other dangers of habitual constipation are too often left unguarded, and that never to omit investigation of the condition of the throat, and never to scamp the treatment of constipation in neurotic children, would lead to more practical benefit than time expended in minute inquiries as to whether a great aunt of the patient did not suffer from migraine or a mother's cousin from religious mania.

THE PROGNOSIS OF HEART DISEASE IN CHILDREN.*

By Douglas Stanley, M.D.Edin., M.R.C.P.,

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One of the most important problems that confront us in practice is the future of a child who has a mitral valvular lesion.

There are many factors on which this future depends, as, for example, the social position and the intelligence of the parents or guardians—in a word, the whole of the circumstances under which that child has to live and grow. But there are others which are less tangible, and which we cannot always estimate at the time—factors whose value can only be gauged in a number of years.

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* Read at the Provincial Meeting held at the Children's Hospital, Birmingham, Saturday, June the 2[illegible]th, 1908.

I have watched the course and progress of many cases of heart lesion, especially mitral, in children for several years. The results have been for me very important and instructive. In some of these cases I was able to see the beginning of the process, that is, to have the patient under observation at the onset of the heart lesion—a point of the utmost importance obviously. In others it was the common story of finding a valve defect, already established in a child brought on account of debility or any of the various symptoms that indicate heart lesion in children, and where we have less chance of doing good than in the former group of cases.

The following case, the boy Martin, aged 11 years, whom you have seen, is an interesting example. Nearly two years ago he was brought to me at hospital on account of heart pain; he appeared very ill. I found loud pericardial friction, and at once took him in. A large effusion rapidly appeared—so large that I had to tap, as the boy showed all the worst indications of cardiac compression. He made an uninterrupted recovery. No lesion could be detected afterwards. He came in about a year later with acute rheumatic symptoms. This time a soft systolic murmur could be heard, and the general cardiac signs made me fear that considerable damage might result. The boy was kept absolutely at rest for two months. Since then he has been very carefully looked after. He has been very little to school and all violent exercise has been forbidden. As you saw him to-day, he looks a bright and active boy. The heart condition is very satisfactory. The impulse is in the fifth space, half an inch inside the mid-clavicular line. The mitral first sound is a little fluffy, there being what can hardly be called a murmur, and what there is, is soon lost outside the mitral area. The second is accentuated and reduplicated. The tricuspid and aortic sounds are good average quality. The pulse is regular and of good size. No veins pulsate in the neck.

This boy is, as I said, very carefully looked after, and for some years to come this supervision will be continued, for fortunately his mother is an intelligent woman, who is willing to do as advised. Given freedom from further rheumatic infection and any other serious illness this boy should, and I believe will, so considerably improve as he grows that possibly his heart may show little, if anything, of past lesions.

A boy, the son of a doctor, was brought to me about six years ago because his father discovered a mitral murmur. The patient was not a full term child, and had a delicate babyhood. When about six years old he ailed for a time, though there was nothing very definite or suggestive of acute rheumatism. I found he had mitral incompetence, there being a well-marked musical systolic murmur with accentuation and reduplication of the pulmonary second.

There was in addition to the drawback of a not robust constitution the question of school in the immediate future. My advice was to get the child to grow and strengthen as much as possible; when sent to school, it should be to some place where he would be looked after and not allowed to overtax his strength. As far as possible there was to be a period of daily rest on his back. This plan was followed for several years. He grew and strengthened, and though now not a strong-looking boy, he is not in appearance much below the average. Quite recently—that is, nearly seven years after my first examination—I was asked to see him again to decide the question of greater latitude in school games. The cardiac condition had entirely altered. The heart's action was regular, the mitral first sound was well marked, and I was very doubtful if anything suggesting a murmur could be heard. Yet in this case a well-marked musical systolic was present for a considerable period—over two years.

The child Osborne, aged 11 years, whom you saw at the Birmingham General Hospital this afternoon, was under my care in hospital on account of well-marked mitral regurgitation, the result of acute rheumatism. I am told that a doctor who treated her at home said she had pericardial effusion. I first saw her about three years ago. She has grown since then. To-day her cardiac impulse is practically in the mid-clavicular line. The mitral first sound is loud and vibrating, accompanied by a slight systolic murmur, which is not heard outside the mitral area; it is somewhat increased by quick movements. The pulmonary second sound is reduplicated and accentuated. The pulse, though of fair volume, is not always regular. This patient has shown so much improvement that I hope there may be still more, and that as she grows there may be corresponding change in the condition of the heart.

I think we are inclined to make up our minds concerning the future at too early a period in the history of heart lesions in children. Certain I am, from watching some of these cases for a number of years, that great improvement may, and does, take place.

I believe that, when the lesion is mitral, that if circumstances are favourable—that is, social surroundings and the parents able and willing to follow directions for a long period, without forgetting the past—the heart participates in the general growth of the child and leaves much of its past behind it. If, however, the lesion be a severe one with much valvular deformity, if there be excessive hypertrophy, especially if there be any pericardial adhesion, or, I may say, if there be reason to suspect pericardial adhesion, the outlook is bad. For instance, I had a little girl in Queen's Hospital some months ago for well-marked mitral disease with double murmur and considerable dilatation. In a sense she did very well, and left the hospital comparatively comfortable, there being fair compensation. But here I hope for little. The child looks badly; from her slightly "mitral" appearance—I can hardly call it cyanotic—it is evident that her vascular system is embarrassed. She is not, I think, growing, although she has put on some weight. Physical examination shows pronounced hypertrophy of the heart, and a marked systolic mitral murmur. It is difficult to say exactly what we mean by a severe mitral lesion, but when I find that the murmur varies under observation, especially if a shifting diastolic be present as well as a systolic, I regard the lesion as severe. In the case just quoted these points are noticed.

I have referred to the question of growth. If a child with cardiac valvular disease grows, we may say there is a better chance for the heart than if he remains undersized and puny. I do not think this has been sufficiently emphasised. We are often asked the question by parents: "Will he grow out of it?" I think we may in some cases of valvular disease say it is possible. It comes to this, and here is my point, that if we can so order a child's life for a period of years, which must extend past puberty into adolescence, if not manhood and womanhood, that everything will conduce to steady growth without strain on the cardio-vascular system; if, with luck, there be no further damage from infections, we may hope for disappearance of a valvular lesion. The period of puberty requires particular attention, and it is just at this time, in deference to what we call civilisation, that the strain of education is greatest. It is then that there should be the greatest care, and a period of daily rest on the back to compensate for rapid growth and the great cardio-vascular changes.

It is most interesting to watch these cases during such a crisis. About ten years ago I saw a child with undoubted mitral disease. Though the history of actual acute rheumatism was doubtful, there had been bad attacks of tonsillitis. I gave a bad prognosis. I saw her at intervals for some years. When about sixteen she was a fairly well-grown girl, and no lesion could be found in the heart. It was suggested when I showed her at one of the Medical Societies that the lesion was what is called functional, because it had disappeared. All I can say is that if it were, then many cases of valvular lesion with marked confirmatory signs are functional, a position I am now less inclined to accept, in view of many other cases I have watched.

CERTAIN TYPES OF FEEBLE-MINDED CHILDREN AND THEIR SIGNIFICANCE.*

By W. A. Potts, M.D.,

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Some aspects of the problems relating to feeble-minded children would seem to be a suitable subject for a paper at the meeting in Birmingham of this Society. In connection with defectives Birmingham has always taken a forward part. It was one of the first towns to institute special schools, and its After-Care Committee, which concerns itself with the care of those children after leaving school, was the first of its kind. The Sandwell Hall Boarding School for mentally defective children was the second of such schools in point of time, while the Monyhall Colony for Epileptic and Feeble-Minded Persons is the first institution established by guardians for uncertified cases, and represents the first combination of boards of guardians to deal with these cases in a manner none of them could have undertaken singly. Birmingham has supplied a large amount of evidence for the Royal Commission now sitting on this subject, and was selected by the Commission as one of the areas for a special inquiry. While work of such great practical importance has been accomplished scientific investigations have not been neglected. Observations made in the special schools and other institutions here form to a large extent the basis of this paper.

For some years it has appeared to me that there is a close connection between the type of a feeble-minded child and its origin. There is nothing extraordinary in this idea. The merest tyro often recognises the offspring of tubercular and syphilitic stock. Why should not our discrimination in such directions be extended? All observers recognise a certain number of different types of these children, which are readily distinguished; why should not some of these types have a definite heredity?

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* Read at the Provincial Meeting, held at the Children's Hospital, Birmingham, Saturday, June the 20th, 1908.

The type, too, greatly influences the prognosis; every expert looks for certain characteristics, which he considers favourable or the reverse. In regard to these children the prognosis is of peculiar importance. Many cases are brought to me, not so much for a diagnosis, for that is often obvious, but for an opinion as to their prospects. Will they ever improve, and if so to what extent? Is it worth while spending any money at all on education? Can they ever be self-supporting? If emigrated is there a reasonable chance of their holding their own and keeping out of the hands of the police? No details that will help us to answer such questions are too insignificant.

First let us consider the Mongolian type, so called from its resemblance to the races in the far East. This group is readily distinguished by certain characteristics in the shape of the head, the eyes, the tongue and the hand. The forehead is rather square, and the skull is of a short, oval shape, its breadth approximating to its length; the ear tends to a similar pattern. The eyes are almond-shaped and obliquely set, with an epicanthic fold. There is a squat nose. The tongue shows transverse furrows. The hands are broad, and the fingers short, especially the little finger, which is frequently incurved. The skin is thick and coarse, often eczematous, with a tendency to a bronze discoloration, and there may be a growth of hair in an unusual situation. Such are the marks of a typical Mongolian. Well-marked cases are, however, rare, as I soon remembered when looking for one to show this afternoon; less characteristic individuals with some of the features, such as the furrows in the tongue completely absent and others somewhat masked, are not uncommon. Can we associate anything definite with this type? Some years ago Dr. Shuttleworth expressed the opinion that such are essentially unfinished children, and that their peculiar appearance is really that of a phase of fœtal life, some defect of formative force being usually traced in connection with their intra-uterine life, not uncommonly ill-health of the mother. He further stated that nearly half these children are the last born of a long family, when the procreative powers are at a low ebb, while in many there is a family history of phthisis. My own observations confirm these statements except that I have found the type to be at least as frequent in the first-born of a family as in the latest born; in a large group of defective cases containing eight Mongolians five were the eldest of the family. They are seldom found among the next three or four, but are certainly often at the tail; one of my cases was the seventeenth. This coincides with the observation that the eldest is frequently not the most robust of the family, that the second and third are the healthiest, the fourth and fifth being also usually up to as good a standard, while after the fifth the progeny gradually deteriorates. A family history of phthisis is without doubt usually to be found in association with this type, but I do not regard phthisis as the essential ætiological factor; the prime cause appears to me to be poor physique of the mother. People of poor physique are frequently the victims of tuberculosis; hence the usual, but not necessary, association with tuberculosis. This type is not uncommon in the better classes, occurring as the offspring of women who are really not physically fit to have children at all. Two instances at once occur to me: one of these, a women who never menstruated till she was five-and-twenty, consulted a physician as to whether this was any bar to matrimony; he saw no objection, but the subsequent birth of a typical Mongolian suggested that the amenorrhœa might have been looked upon as an indication of a want of procreative force. In the other instance a couple of highly neurotic parents had five more or less normal children; the sixth, born when the mother was well over forty, was an ament of this group. The decision that a child conforms to this type also influences the prognosis; though many are bright in some ways and full of promise, they seldom accomplish much; their physique is nearly always poor; the majority die of tubercular disease before reaching adult life.

I wish next to discuss the type spoken of as the simple congenital. These show no marked deformity of head or limbs. They are usually below the average height with heads of normal shape, but the expression of the face is vacant, and there are several obvious anatomical peculiarities—the so-called stigmata of degeneration. In making a diagnosis an important point to remember is that the stigmata tend to be multiple in defectives, instead of occurring singly, as may happen in normal individuals.

The abnormalities are chiefly found in the face, head, and hand, the group, well described by Fletcher Beach, being without much difficulty quite definitely marked off.

The irregularities take the form of obliteration or exaggeration of normal markings, such as the antihelix or other parts of the ear, or consist in marked diminution in size of such important landmarks as the mouth, orbital fissures, or lower jaw. The teeth are often irregular, and may be arranged in two rows, while the ear is implanted too far back.

In my experience this type is pathognomonic of an insane or feeble-minded ancestry; mental incompetence is their birth-right. In the group of cases already referred to there were 24 who fell into this class; 15 of these were ascertained to have such a heredity. This gives a percentage of over 60, which is higher than that obtained among the feeble-minded as a whole. In a group of 250 consecutive cases of feeble-minded children in which I made special inquiries into the family history, only 30 per cent. had a similar history. In some of these cases there is a continuous line of defective ancestry; thus both the mother and the grandmother of one boy I showed this afternoon are obviously feeble-minded. When the public at last recognises the necessity of segregation this class ought to be considerably diminished. As regards prognosis in children of this type I find their physique often to be fairly good, and their expectation of life longer than obtains among the feeble-minded as a rule. I can also confirm Fletcher Beach's statement that "these cases, unless of a very low type, improve very much under proper education and training."

Next take the neurotic type, quite a distinct one, though the classification is on a different basis, for it may include members of the Mongolian, hydrocephalic, or other groups distinguished by the cranial configuration. The chief characteristic is weakness, mental and physical. The nervous system is both weak and irritable in marked contra-distinction to the stolidity of some defectives. The power of attention is almost *nil.* The eyes quickly wander if directed to a fixed object. If asked to extend the arms in front at the shoulder level the arms are not raised to that level, nor are they straight, and Warner's "weak hand balance" is noticed. "The wrist droops, the bones of the palm of the hand are somewhat folded together, while the thumb drops and all the fingers are slightly bent." Often the left hand is kept at a lower level than the right. What is the significance of this type? I have little doubt that it is pathognomonic of an alcoholic heredity. A history of alcoholism was obtained in 40 per cent. of the group of 250 defective children in which I inquired specially into the family history. The majority of the 40 per cent. were included in this type. I have been told by other workers in this direction that they have noticed this connection between a history of alcoholism and the nervous group. This is not inconsistent with the selective action of alcohol as a poison on nerve-tissues, and is the human corroboration of the experiments made in Germany with dogs. If a pregnant bitch is treated with alcohol the litter tend to develop epilepsy and other signs of mental weakness.

I believe careful observation and full inquiry would result in definite knowledge with regard to other types. For instance, we can probably confirm what Shuttleworth has said of the microcephalic, that the prognosis is favourable or otherwise in proportion to the size of the head. It is well to remember that this only holds good till the size of the head approaches to the normal, for in the macrocephalic or hypertrophic cases, as they are sometimes called, the larger the head the more stupid the child. The unfavourable element therefore is the extent of deviation from the normal. In this connection it is interesting to note the impression with regard to the group of defective children who are normal in appearance, well developed, and often good looking, and who can only be distinguished by an intellectual examination. The prognosis here is bad; in the words of Langdon-Down, it is "inversely as the child is comely, fair to look upon and winsome."

The last type which I wish to describe is the moral defective. This again is based on a different classification, our guide being the social conduct. It would never do to explain many cases of wrongdoing by inclusion in this group; as a matter of fact, my observation in prisons has convinced me that only very few of those found there can plead this abnormality as a justification. Still, I believe the type does exist, and that its recognition is important. Just as an instance, consider a youth, aged 19 years, who was brought to see me recently; he is the son of ordinary respectable people. He was educated at an ordinary school, and subsequently at a technical school, where he exhibited special talent, especially for drawing. He writes an exquisite hand, and is an expert in photography. He has had several situations, usually as a clerk, but if he has not been summarily dismissed, he has always given them up after a few weeks' work. He was a thief from an early age, and has frequently been caught in the act at school and elsewhere. He has several times been in the hands of the police, and has served a term of imprisonment. He is utterly depraved; he lies in bed in the morning, and spends all the money he can get on drink and vice; he steals from his own family, and pawns the clothes with which he is provided. Although he will not do ordinary work he spends hours in his favourite hobby of enlarging photographs; this he does, not in the usual way, but in a manner suggestive of a mental twist, for he makes a large pencil drawing of a small photograph, and then photographs the large drawing. So accurately is this done that anyone would believe the enlargement to be effected in the usual way. He brought several specimens for me to see, and I could only think that his prospects as a forger were far too brilliant. He is certainly abnormal, for he has a narrow forehead, suffers from an extreme degree of myopia, and has a slightly dilated heart. When I carefully studied ninety-seven consecutive cases admitted to a Magdalen home, I found that seven of these might be fairly described as morally defective. This home, I may explain, is filled with young girls, practically all of them in their teens. I classified as morally defective girls who were sharp and intelligent, but without sense of honour or modesty, and who were insusceptible to moral and religious training, thereby differing markedly from the majority; nothing could restrain them from lying and from stealing from their companions. I could quote many other instances, but must not say more now than that essential features in the diagnosis of these cases are the consideration that the crime is out of all proportion to the temptation, and further, that the moral shortcomings are not to be explained by training and environment. These cases are very difficult to deal with, though something may be accomplished by hygiene and prolonged training.

The subject of this paper is one to which it is difficult to do justice in a limited time. If I have brought forward any evidence in favour of the value of carefully studying different types and noting their characteristics, my object in writing it has been achieved.

THE TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.*

By FRANK BARNES, M.S.Lond., F.R.C.S.,

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THE treatment of congenital disease of the hip as the subject of surgical discussion has been dealt with so frequently that I feel I owe you an apology for its introduction, but my excuse is that apparently some scepticism still prevails among both surgeons and physicians as to the value of the methods introduced to us by Hoffa and Lorenz, and which they have done so much to elaborate.

In the short time at my disposal I can only emphasise the factors which I consider of the most importance in the treatment of this condition, and shall doubtless lay myself open to the charge of having neglected many details both of pathology and treatment which make for success or failure, but which I shall hardly be able to mention.

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* Read at the Provincial Meeting held at the Children's Hospital, Birmingham, Saturday, June the 20th, 1908.

It will suffice me if I can prove to your satisfaction that it is upon the early recognition, and before all upon the early treatment of this condition, that we obtain the best results from a routine, one of the most tedious in surgery, and one from which we can hardly look for practical results before some twelve or eighteen months have elapsed from the onset.

May I briefly mention some of the more interesting details regarding the condition and its history :

Discovered and described by Dupuytren in 1826 it was for a long time considered to be incurable, and probably for one or two reasons. In the first place it was rarely discovered until the secondary deformities had become marked, and then the treatment practically consisted in applying extension in order to draw the femur down to its natural position.

Then, again, it was considered that the primary lesion lay in a defect of the acetabulum, or rather, I should say, in the want of development of the acetabulum. And this being so, no treatment could be of any avail.

In 1890 the first open operation was performed by Hoffa, of Berlin, who opened the joint by a posterior incision, deepened the socket by means of gouges and then replaced the head of the femur with good results in a limited number of cases, but many things were against it. Owing to the depth of the structures it meant a serious loss of blood, many muscles had to be cut, and the mortality from the operation itself was very high. Moreover, its results were usually unsatisfactory, relapses being the rule, and where the hip remained in position ankylosis frequently occurred, but certain observations were made which have led to the modern treatment. It was found that an acetabulum of fair depth and development was common, especially in the younger cases. This fact has been verified of recent years through the agency of the X rays, which have undoubtedly contributed in the highest degree to the adequate understanding of the methods of cure. The open operation also demonstrated another fact, since confirmed by the radiograph, and that is, that in old-standing cases the head of the femur frequently developed a depression on the ilium, a sort of secondary acetabulum in fact, which to some extent acts as a socket for the head, and also limits its movement upwards.

On examination of radiographs of various cases it will be seen that the acetabulum varies very considerably, in some being apparently of normal size and in others very shallow and bearing more resemblance to the glenoid cavity of the scapula, this difference being more marked as compared with the normal in the older patients. In fact, the younger the patient the less likelihood of there being any gross difference in the cavities of the two sides.

This has been carefully worked out by Heusner and Marcwald, who on the examination of a large number of fœtuses made these observations, that the acetabulum is relatively shallow in fœtal life, that in new-born children covers one third of the head of the femur, whereas in children five years of age one half of the head is covered by the acetabulum. Also, that there was a disproportionate laxity of the capsule in female as regards male, and that therefore in all probability the primary condition was a subluxation only, which became complete on standing or walking. This laxity of the capsule probably accounts for the prevalence in females, 84 per cent. being of that sex.

It seems, therefore, that the depth of the acetabulum varies with age, or, to put it in another way, that it depends for its normal development upon the apposition of the head of the femur, and this is the fact around which centres the modern treatment of congenital dislocation. The marked projection of the upper lip of the acetabulum with its buttress of bone running into the anterior inferior spine is a development consequent upon the transmission of the weight of the body through the ilium on to the heads of the femur, and, therefore, an essential part of the treatment is that after reduction the child should be made to walk with the femoral head in its proper position.

When several years have elapsed before treatment this buttress is wanting and attempts at reposition naturally fail.

I have said that in very young patients there is relatively in the majority of cases very little difference in the acetabular cavities of the two sides, and probably until the child commences to walk there is nothing to call attention to the condition; the head of the femur, lying in close proximity to the joint, being pushed upwards and backwards by the act of walking. At this stage, therefore, reduction is easy. Later on other changes take place which militate against reduction, such as the atrophy of the head of the femur, obliquity and shortening of the neck, and what is more important from the immediate point of view of reduction, changes in the capsule. This becomes stretched out like a strap over the cavity and often develops a sort of hour-glass contraction, offering an almost effective barrier to the reduction by manipulation.

It is impossible to over-estimate this advantage of age in the light of treatment. Not every case of congenital dislocation can be cured, but if diagnosed early probably the majority can be sucessfully dealt with, whereas after a certain age very few indeed are amenable to treatment, and this age I am inclined to make five or six years. This, I know, is somewhat lower than many other surgeons go, but I refer to actual cure, where the head of the femur lies in its proper cavity and is not merely an anterior transposition so frequently vaunted as a cure. The main factors against success are the changes that take place in the whole of the structures concerned consequent upon this false position, and it is imperatively necessary that treatment should be adopted before these secondary changes become established.

I cannot in the short space of time allotted me go into minute detail of the various steps in the reduction of the dislocation, and I shall merely mention shortly a few of the difficulties I have met with. In the first place by manipulation in various directions the resistance of surrounding structures has to be overcome. These are, as has been already pointed out, the more dense and resistant the older the patient, while in cases which have not long walked, *i. e.* in children up to the age of two or three, reduction may be comparatively easy.

Where a well-marked acetabulum exists with a distinct margin or buttress superiorly, the difficulty of levering the head over the posterior lip may be great, but these cases in my experience have a very good prognosis, especially where the head remains in the socket in the flexed and abducted position without assistance. Those cases in which the head slips easily into the joint, but as readily slips out owing to a deficient posterior lip and perhaps a tight anterior portion of capsule, have not nearly as bright an outlook, since it is extremely difficult to keep the limb in position ; no matter how well-fitting the case, it always allows of some shifting of position on the part of the child, and, therefore, a loss of the proper relationship between the head and the socket.

I have found that when the obstacle to reduction lies in a contracted anterior capsule which levers the head out as soon as in position, a good plan is to fix the limb temporarily for a week in the flexed and over-abducted position. This stretches the tight portion and reduction becomes much easier on the second attempt.

Where the posterior lip is wanting the prognosis is bad, since these cases are usually older and the acetabulum is too shallow to adequately support the head, and probably the better treatment would be to convert the posterior displacement into an anterior one. This results in a much better functional state, the child walks more uprightly, the lordosis disappears to a marked extent, and there is less shortening.

Some surgeons as a preliminary to reduction employ heavy weight and extension, even up to 30 or 40 lbs., for a week or fortnight beforehand. This is probably of more value where the capsule has become markedly contracted, though probably of little use in the variety known as hour-glass contraction.

Frequently, however, it becomes necessary to use the tenotome to overcome resistant structures, and especially with regard to the adductor muscles, which have become shortened. These not only oppose reduction, but act as a lever pushing the femur backwards, hence it is sometimes advisable to cut the adductor longus near its insertion into the pubes in order to ensure greater stability during the first month or so of treatment.

After reduction, with its great bruising of the parts, and the subcutaneous tearing of various structures which is most frequently necessary, the limb is placed in what is known as the frog position, flexed at right angles or even beyond this, and abducted to the full extent. It is fixed in this position by means of a plaster case and as soon as possible the child encouraged to walk. In my own practice I, however, never allow walking in the original case for this reason: there has been a considerable interference with the structures of the part; portions of the capsule which were stretched are now loose and *vice-versâ*, so that for the first month or five weeks the patient is simply kept in the recumbent position until the various structures have settled down and become accustomed to the new position. Then a new case is applied and the child begins to walk either by means of a high boot or a patten, or, in the case of double dislocations, with a stool or chair. This position is maintained for six or eight months and then the limb is gradually brought down, still being held by means of plaster cases until the child is able to walk almost naturally. During this time it is very necessary to have occasional radiographs taken so as to ascertain the position of the head, and especially during the first few months.

It is this ambulatory treatment which constitutes the essential feature of the modern method. The socket is deepened by the natural process of the pressure of the head of the femur, and this is the lesson we have learned from the secondary hollows developed in old-standing cases and from the natural growth of the normal acetabulum. The probability is that in the majority of cases the acetabulum is not to blame in the first place, but that the original cause is some malposition *in utero* combined with an abnormal laxity of the capsule, and that the acetabular changes are due to a secondary and not primary lack of development.

Some difference of opinion exists with regard to the best way to apply the plaster case. My own method is to cover the parts involved with a thick layer of brown cotton-wool, which is then fixed firmly by a flannelette bandage, the main point being to take precautions lest any sores from pressure or rubbing should be caused. And in the first two or three cases I include the opposite thigh slightly abducted; this I find gives much better fixation; at the same time I strengthen various naturally weak spots, such as the folds of the groin, by extra layers of bandage. And at the back of the affected hip I include a roll of plaster held in position until set so as to prevent the liability to displacement backwards which is very difficult to counteract. The cases are changed once every six weeks, not only on account of cleanliness, but also that I may examine the condition of the joint, take a radiograph occasionally, and vary the position according to circumstances.

In certain cases a cure may be looked forward to in about twelve or eighteen months, and in a few all apparatus may now be discarded, but in a certain number of the cures a hip splint in the form of a pelvic band and thigh support should be used for some two or three years afterwards.

In conclusion, let me assure you that this short paper is not intended to be even a summary of the various conditions governing either the treatment or the pathology of congenital dislocation of the hip, but merely a plea for the better understanding of the paramount importance of two factors—early recognition and early treatment.

Abstracts from Current Literature.

Medicine.

Alimentary intoxication in nurslings (*'Gaz. med. Italian.,' April* 1908, *No.* 18, *p.* 177).—**Finkelstein** says there is a general tendency to consider enteritis, on account of its toxic disturbances, as a disease in itself, distinct from other diseases of nutrition, but it is easy to trace the connection between its different forms. These phenomena are: Changes in the sensory system, special changes in the respiratory rhythm, alimentary glycosuria, fever, collapse, diarrhœa, albuminuria, loss of weight and leucocytosis. The various grouping of these symptoms allows the differentiation of several principal types. In the choleriform type there is loss of water and marked collapse; in the hydrocephaloid, prominence of nervous phenomena. The somnolent form is one of the most frequent and important, and is not accompanied by grave intestinal disturbance. There is a form of dyspeptic asthma in which laboured breathing, with attacks of apnœa or sudden collapse, dominate the scene. The course is very variable, being either rapid or sub-chronic. In the first stage there is lassitude and somnolence; the features lose their expression and become mask-like and even cataleptic. If the condition becomes worse there may be coma or periods of health alternating with periods of excitability; spasms, contractions, convulsions and paralysis are also met with. A diagnosis has to be made from pneumonia, diabetic coma, etc. The phenomena of intoxication are met with equally in acute forms of changes in nutrition as in chronic forms of atrophy, but are not specific to these changes. Hence they are to be considered as the index of a definite reaction in the organism, which occurs every time that a lesion is produced of a definite degree by reason of some given disease. Thus, while there is a change in the oxidation of sugar, there is also a disturbance in the assimilation of fat with consequent acidosis, and at the same time a toxic destruction of albumin occurs with loss of nitrogenous equilibrium. All this may be the expression of changed hepatic oxidation, as is proved experimentally, by the elimination of glycocoll in great part unoxidised in severe cases, and by the deficient oxidation of benzol and phenol. An analogous condition is observed in uræmia, cholæmia and diabetic coma See also '*Jahrb. f. Kinderheilk.,*' 1907, *No.* 15. VINCENT DICKINSON.

Mammary hypertrophy and lacteal secretion in a new-born child ('*La Clin. Infant.,*' *April,* 1908, *p.* 225).—**Apert** and **Bucaille** report the case of a female child, aged 18 days, whose mammæ formed two hemispheres on the chest extending from the sternal margin to the axilla and from the clavicle to the waist; their bulk was relatively much larger than the breasts of an adult female, and comparable to that of a puerpera in full suckling; their consistence was stony, and the lobules of the glands were to be felt like small pebbles. The hardness of the breasts disappeared if they were disgorged by pressure, when fine streams of milk were ejected. About a dozen cubic centimetres of milk could be obtained in this way, and after its extraction the breast had the normal consistence of an adult female breast and a pyriform shape; the nipple, previously retracted in the centre of the hemisphere by the swelling of the gland, became slightly prominent. Beyond this the infant presented nothing peculiar, being particularly well nourished; lanugo, facial milium and sebaceous secretion were not more marked than in other new-born infants. The secretion of milk commenced two days after birth and went on increasing, attaining its maximum about the twelfth day, when it began to decline. Analysis showed the composition of the milk to be identical with that of a woman in full lactation: there were no colostrum corpuscles. The elder brother of this child, now aged 5 years, also had during the first weeks of life a mammary congestion with lacteal secretion. The mother nursed both her children, lactation being normal except that there was some difficulty in getting rid of her milk. Other observers have noticed an hereditary family disposition in these cases, and Garipuy has reported that the same condition is not infrequent in young fillies. VINCENT DICKINSON.

Mellituria in nurslings (*'La Presse Méd.,' May*, 1908, *No.* 40, *p.* 314).—**A. Romme** calls attention to a case reported by **von Reuss** (*'Wien. med. Wochens.,'* 1908, *No.* 15, *p.* 800) of an infant, aged 3 months, brought to the hospital in a state of extreme atrophy, who died at the end of forty-eight hours. The urine contained not less than 1·2 per cent. of glucose, although nothing was given but tea with the addition of saccharine. At the autopsy there was atrophy of all the organs with brown atrophy of the liver; the pancreas seemed normal. This was a case of true glycosuria. Von Reuss states that any condition which prevents the normal metamorphosis of lactose will cause sugar to appear in the urine, and will show itself under the form of a lactosuria if the lactose is not split up in the intestine or under the form of galactosuria or glycosuria, if the products formed by the splitting up of the lactose do not undergo their ultimate physiological transformation. In fact, von Reuss has frequently found lactosuria in dyspeptic infants. In the great majority the quantity of lactose is never very large, and only in severe gastro-enteritis reaches a proportion of 1 per cent. Its origin is easy to explain; the intestinal mucous membrane, changed by the pathological process, of which it is the seat, lets part of the lactose pass entire. Thus lactosuria does not indicate the existence of a disturbance of general nutrition, but that of a local kind limited to the intestine, and in this respect it possesses a diagnostic value in the sense that, even in the absence of digestive disturbances clinically inappreciable, it indicates the existence of a chronic affection of the intestinal mucous membrane. Von Reuss is of opinion that lactosuria does not provoke any disturbance on its own account, and has never found acetone or diacetic acid in cases of lactosuria accompanied by phenomena of intoxication. The significance of galactosuria and glycosuria is entirely different, and indicates either a disturbance of general assimilation or of glycogenesis, *i. e.* a lesion of the liver. He cites a case where it occurred in a child, aged 8 months, who had cirrhosis of the liver. Thus, the diagnostic and prognostic value of mellituria is nurslings depends on the kind of sugar found in the urine. This differentiation is rarely made, and it is possible that a good number of cases of cured diabetes in young children which have been published were cases of lactosuria or transient galactosuria.

VINCENT DICKINSON.

Pirquet's cutaneous tuberculin reaction (*'Wien. med. Wochens.,'* No. 28, 1907).—**Pirquet** discusses the cutaneous tuberculin reaction as introduced by him. The method consists in the introduction of Koch's original tuberculin ("alt. tuberculin") diluted with one part of a 5 per cent. solution of carbolic acid in glycerine and two parts of normal saline solution, into the superficial layers of the skin, as in vaccination: three small scarifications are made, a drop of the diluted tuberculin is placed on two, and the third scarification, in which no tuberculin is used, serves as a control. He considers his method superior to the hypodermic injection of tuberculin, for in the latter method, in tuberculous subjects, three reactions occur: (1) "Focal reaction," *i. e.* exacerbation of inflammation in parts affected with tubercle; (2) a pyrexia, which in children is important as indicating tuberculous infection; (3) a "needle-track reaction." In Pirquet's cutaneous vaccination the "needle-track reaction" is practically the sole result, pyrexia occurring in only about ·5 per cent. of the cases. A small red papule appears at the site of inoculation, usually within twenty-four hours. The diagnosis depends on the size, shape, colour, and time of appearance of this papule. The average diameter is 10 mm.; greater diameters are found in tuberculosis of bones, joints, and glands, which usually respond sharply to tuberculin injection. The colour is usually a bright red, which fades away and in its place a pigmented spot remains, sometimes for weeks, but in infants all trace of positive reaction may be gone in a week—in cachectic children the colour may be a livid tint. In tuberculous subjects the reaction is usually at its height twenty-four to forty-eight hours after inoculation; a "torpid reaction," that is, no sign till after forty-eight hours, may occur in older children who have no clinical signs of tuberculosis, and probably indicates healed tuberculous foci. The failure of 11 cases out of 80 undoubtedly tuberculous children Pirquet attributed to their cachectic condition; such cases included tuberculous meningitis, advanced pulmonary and general tuberculosis, and chronic tuberculous caries. Seeing that these cases often fail to react to hypodermic injection of tuberculin, a negative result is common to either cutaneous or hypodermic methods, and the former is more convenient and safer. Necropsies will alone show whether cutaneous tuberculin injection can be relied upon to reveal small tuberculous foci, such as caseous bronchial glands. In 23 cases which had shown no reaction necropsies gave no evidence of tuberculosis, and in a few cases which showed a reaction and in which a necropsy was obtained there was evidence of tuberculosis with one exception. If the first reaction does not occur for forty-eight hours, a later scarification is often followed by an earlier and more marked reaction; in two such cases which came to post-mortem examination caseous foci were found; the explanation given was that the inoculation had wakened up a specific "allergie," with the formation of anti-bodies. A positive reaction is common after eight years of age, whether tuberculosis is suspected or not, and is probably due to the fact that after that age there may be a tuberculous infection which has become latent; in young children a negative reaction will exclude tuberculosis, as in the first year latent tuberculosis is rarely found. On the other hand, a negative result is often obtained in decided tuberculosis of adults, a condition which is comparable to the negative result in cachectic tuberculous children; therefore, the younger the child the greater are the possibilities of diagnosis and prophylaxis. In the latter connection it is suggested that the child should be inoculated every six months, so that treatment can be commenced directly any positive reaction occurs.

Czerny ('*Berliner klin. Wochens.*,' *No.* 45, 1907) noticed that children with basilar meningitis had not reacted to the injection, Pirquet attributing this result to the cachectic condition of the child. Children beyond the breast age with decided tuberculosis had consistently given a positive reaction. In 52 children giving a negative Pirquet reaction, the post-mortem evidence was also negative with respect to tuberculosis; Czerny came to the conclusion that Pirquet's reaction can give useful evidence, but negative results did not exclude tuberculosis. In medical matters one had often to test uncertain methods; the question was, How much shall the practical physician rely on the Pirquet reaction, and whether the method is useful to him in diagnosis? Seeing that we have no means for the detection of initial tuberculosis, Czerny thought we should not renounce the employment of a reaction in tuberculosis, though ill-defined. He cautioned his hearers against giving rise to a tuberculosis scare among the public. One should, in the first instance, use the old means of corroborating a diagnosis; there was an advantage in the harmlessness of the reaction, and the method could readily be employed in children, whether feverish or not. As a practical matter a large incision must be avoided. Two children showing a typical reaction with Pirquet's injection were exhibited. (Medical Section of the Silesian National Society in Breslau, October 11, 1907.) J. E. BULLOCK.

Empyema in children (' *Univ. of Penna. Med. Bull.*,' *December*, 1906). —**Jopson** reports on forty-one cases of empyema in children, and describes his methods of treatment. The percentage of deaths for acute cases was 22·8 per cent. Most of the fatal cases were in very young children. The causes of death were exhaustion, pneumonia and sepsis. There was an apparent difference in the virulence of the infection in different years, as has been observed by Scharlau. WILFRED TROTTER.

Meningococcal septicæmia and the pathogenesis of epidemic cerebro-spinal meningitis (' *L'Echo Med. du Nord*,' *April*, 1908).—**Job** and **Batier**, while describing a case, review the work done by others in this subject. Osler in 1898 found the meningococcus in the blood and pus from a joint. Salamon described a case of true septicæmia due to the meningococcus, beginning with articular swellings—the meningococcus being also found in the blood—and ending with meningitis. The same organism has also been found in the blood in meningitis by Lenhartz, in ulcerative endocarditis by Wasfield and Walker, and by Martini and Rhode in meningitis before the appearance of the cerebral symptoms. The authors' case was in a man, aged 22 years, who developed meningitis, and a week later the meningococcus was found in the blood. At the necropsy there was peritonitis, pericarditis, and left-sided pleurisy as well as meningitis, from all of which a pure culture of the diplococcus was obtained. The cases show that there are many forms of meningococcal septicæmia, and that the organism may be present in the blood without any signs of implication of the meninges. The source of the infection seems to be generally the naso-pharynx, and the infection to be propagated by the lymphatics, though there is no proof of the latter, and it is more probable that the blood is a frequent channel.

J. PORTER PARKINSON.

Spasmodic family paraplegia ('*L'Echo Med. du Nord.*,' *March*, 1908).— **Delearde** and **Minet** report a case in a girl, aged 3 years. The father was a drunkard but denied syphilis; the mother was healthy and had borne nine children with no miscarriages. Most of the children had suffered from some nervous ailment: one had convulsions at the age of eight years, another had chorea, one died at four and a half years, having had stiff limbs with spastic gait and tremors. The others appear healthy with the exception of a boy who died at five and a half years with spasmodic paraplegia. The birth of this child was difficult, podalic version being necessary; she walked at fifteen months, but at the age of two years walking and standing became difficult, and later the speech became difficult. Now the legs are stiff and the feet hyper-extended; walking is impossible. The upper limbs are slightly ataxic but not tremulous. There is slight dorsal lordosis. There are no abnormal ocular phenomena. Speech and deglutition are difficult, and food passes by the nose. The deep reflexes are exaggerated, but the cutaneous reflexes are normal. The sphincters are intact and intelligence is normal. Treatment by mercury and iodide of potassium have had no effect, and slight salutation movements of the head have lately appeared. The authors consider there are all forms of transition between this and family amyotrophic lateral sclerosis, family cerebral diplegia, and family disseminated sclerosis. They are but a series of types realising in variable fashions associations of various symptoms, especially spasmodic contracture of the limbs. J. Porter Parkinson.

Preventive measures in measles (*'Journ. Roy. Inst. Public Health,' April*, 1908, *p.* 214).—**J. J. Buchan** disapproves of the early and long closing of schools adopted by some medical officers of health, and recommends daily medical inspection of children during an epidemic. School closure is only justifiable when the danger of unrecognised cases coming to school is so great that only the closure will stop the spread of the disease. As regards contacts only infants and older children who have not gained immunity by a previous attack should be excluded from school. The practical value of disinfection as a preventive measure in measles is very doubtful. J. D. Rolleston.

Some causes of infantile mortality (*'Journ. Roy. Inst. Public Health,' April*, 1908, *p.* 220).—**Prudence Gaffikin**, in an interesting paper based on her public health experience in the manufacturing towns of Belfast, Huddersfield, and Warrington, recommends the following reforms: (1) Prohibition of the sale of abortifacients and patent medicines containing dangerous drugs without a doctor's prescription; (2) teaching of hygiene to older girls; (3) training of midwives more fully in the importance of proper feeding of infants; (4) notification of epidemic diarrhœa; (5) inspection of all children put out to nurse. J. D. Rolleston.

Whooping-cough in infants (*'Thèses de Lyon,'* 1906–1907, *No.* 103).—**A. Brevet** records twenty-eight cases in infants whose ages ranged from twenty-six days to twenty months. Whooping-cough in infants presents the following peculiarities: The prodromal period is usually shorter than in older children. The paroxysms are often associated with nervous symptoms, viz. either generalised convulsions or laryngeal spasm. Vomiting is more frequent than in older patients, and is a cause of rapid loss of nutrition. Broncho-pneumonia is a frequent complication and its evolution is generally rapid. It occurred in fourteen cases, twelve of which were fatal. J. D. Rolleston.

Congenital tuberculosis (*'Arch. de méd. des enf.,' January and February*, 1908).—**Péhu** and **Chalier** think that in the immense majority of cases of infantile tuberculosis the disease has been acquired by contagion after birth. Owing to the rapid development of tuberculosis in children only cases of tuberculosis in the first month of life should be regarded as congenital. A distinction between syphilis and tuberculosis in the fœtus or newly-born is not always easy. The presence of the *Spirochæta pallida* or the tubercle bacillus is decisive. Broncho-pneumonic areas or disseminated miliary abscesses may be mistaken for granulations. A macroscopic distinction in such cases is sometimes impossible. As a rule the maternal tuberculosis assumes a grave form which is aggravated by gestation, so that the mother frequently dies either during pregnancy or shortly after delivery, which is often premature. Tuberculosis of the fœtus has only once been found in the fourth month. In all other cases it occurred in the fifth month or later. Contagion *in utero* seems to depend upon the establishment of the placental circulation. Conceptional heredity lacks an anatomical substratum. J. D. Rolleston.

Tonsillitis complicating rubella (*'Med. Klin.,' No.* 52, 1907, *and 'Zentralb. f. inn. Med.,'* 1908, *p.* 304).—**Lublinski.**—A girl, aged 15 years, who had previously had scarlet fever and measles, on the fifth day of an attack of rubella and four days after the temperature had become normal had a severe attack of tonsillitis. Five days later the affection completely subsided without suppuration. J. D. Rolleston.

Otitis in varicella (*'Thèses de Lyon,'* 1906–1907, No. 53).—**M. Moy.**—In 875 cases of varicella Semtschenko noted otitis in 17. This complication, which is most likely to occur in children with large tonsils or adenoids, is due to the bucco-pharyngeal inflammation spreading to the middle ear by the Eustachian tube as in other infectious diseases. The aural manifestations of varicella are: (1) Acute otitis media due primarily to varicella. Grave complications may arise, *e.g.* mastoiditis, meningitis, cerebral and cerebellar abscess, and thrombosis of the lateral sinus. (2) Recrudescence of old otitis. (3) Otitis externa, which is usually benign, but is sometimes followed by mastoiditis and even meningo-encephalitis Prophylaxis should consist in a careful daily examination of the throat and external ear and in the institution of rigorous bucco-pharyngeal antisepsis.

J. D. Rolleston.

Congenital biliary cirrhosis (*'Arch. of Pediat.,' March,* 1908).—**Griffith** records a case of this rare condition. The child was aged 5 months, and had, according to the history, been jaundiced since birth. He had been under treatment for some time prior to admission into hospital, and though the jaundice had not varied, the weight was stated for a time to have increased. On admission the child was deeply jaundiced and presented several purpuric spots on the scalp. The urine contained bile-pigment, and the stools some dark material, apparently altered blood. The child gradually lost weight in spite of the facts that there was no diarrhœa or vomiting, and that food was well taken, and died after a period of five weeks. At the post mortem the liver and spleen were found greatly enlarged. The gall-bladder was empty and collapsed, and the cystic duct completely obliterated. Both hepatic ducts were patulous, but as only a partial examination was allowed it was impossible to trace out the common bile-duct. Microscopically there was a typical biliary cirrhosis with an extensive increase of the periportal connective tissue and of the bile-ducts. The hyper-plastic connective tissue in some instances invaded the lobules, but was in general confined to the periphery. In the centre of the lobules there was some deposit of fibrous tissue of a younger and more cellular type. There was no evidence of congenital syphilis in the case. T. R. Whipham.

Epidemic poliomyelitis (*'Arch. of Diagnosis,'* 1908).—**Sinkler** gives an analysis of 274 additional cases, making a total of 509 with those already reported, which tends to support his conclusions, published in the 'American Journal of Medical Sciences,' April, 1875, that a large majority of cases of poliomyelitis occurs during the summer months. In his series of 509, 418, or 82 per cent., occurred between June and October. The nature and course of the disease indicate that it is due to an infection by a micro-organism developed during the hot weather, and reference is made to the fact that in an epidemic in Vermont in 1894 horses and birds were also affected.

T. R. Whipham.

Hæmophilia in the newly-born ('*Lancet,*' *July* 18, 1908).—**F. G. M. Brittin** contributes a note on an interesting case, evidently of this nature. On the day after birth he cut the infant's frænum linguæ and next day found persistent oozing. The whole of the portal region, too, was black, distended and fluctuating. This swelling extended backwards over the skull and downwards behind the ears, which were pushed out. The skin as far as the clavicles was also discoloured. The right shoulder and arm were darkly ecchymosed, while the right foot and leg were also darkly coloured. On the following day the eyelids were black, and the breathing had become stertorous. Death occurred in the afternoon.

James Burnet (Edinburgh).

Supra-renal hæmorrhage in an infant ('*Lancet,*' *June* 6, 1908). —**B. P. Morison** reports the case of a male infant whose umbilical cord had to be tied three times on account of hæmorrhage. On the ninth day the infant seemed weak and refused the breast. Some jaundice was present. On the tenth day snuffling was observed and grey powder was ordered. On the seventeenth day the child was feeding fairly well, and the cord had just separated. On the following two days red patches were noticed on the chin. The child was now somnolent and refused nourishment. When seen there were bright red patches on the chin, round the mouth, toward the back of the scalp, and at the tips of the fingers and toes. The scrotum was rather full, red and slightly eroded. Death occurred on the twentieth day after birth. On post-mortem examination there was passive congestion of the viscera. The spleen was of a deep slate-blue colour, but not softened. The pancreas was normal. The right supra-renal body was also normal, though passively congested. The left one was very dark slate-blue. Opened *in situ* it at once collapsed, and shed its fluid contents into the abdomen. On examination it was found to be converted into a blood-sac. The family history was not a good one. Both grandmothers died from carcinoma and the grandfather from pulmonary tuberculosis. There was no history or suspicion of syphilis. The presence of some undiscoverable toxic agent was probably the cause of the hæmorrhage. James Burnet (Edinburgh).

Tongue-tied ('*Prag. med. Wochens.,*' *April* 16, 1908).—**Scleissner** finds the operation of cutting the frænum is frequently carried out by doctors and nurses at the insistence of the mother, either because the child is said to be unable to suckle or to speak plainly. He examined 2000 sucklings and 10,000 children without finding one instance of a child being tongue-tied. Moreover, he remarks that greater or lesser mobility of the tip of the tongue does not affect suckling at all, and has no practical bearing upon speech. The operation is not without danger: in most cases it is done when the infant is suffering from dyspepsia due to overfeeding. There being no improvement, the milk is next blamed and artificial feeding resorted to. The operation should never be performed. M. D. Eder.

Prurigo infantum gravis ('*Prag. med. Wochens.,*' *May* 24, 1908.—**Raudnitz** recommends the following procedure in obstinate and chronic cases. After bathing the entire body cover it with a thick layer of Thigenol; then carefully bandage with calico bandages; upon these are laid wet, strong starch bandages, made fairly tight so that scratching is quite impossible. Everything depends upon the care with which the bandaging is done. These remain on eight days and are changed directly the child is taken from its bath. The treatment lasts five to six months. Arsenic is given at the same time in large doses. Insect powders and a total destruction of fleas and bugs are other essential parts of treatment. M. D. Eder.

Pathology.

Albuminuria in infants (*'La Pediatria,' May*, 1908, *p.* 359).—**N. Fede** divides cases into large classes. (1) Functional, in which the urine systematically and repeatedly examined shows a slight trace of albumin, but absence of casts (except hyaline). (2) Organic, in which there is a definite amount of albumin and constant presence of elements indicating anatomical kidney lesion. Infections in general, especially the exanthemata, toxæmia from reabsorption of fermentative intestinal products, are the chief ætiological factors, to which may be added mechanical disturbance of the general or pulmonary circulation and the arthritic diathesis. Transitory albuminuria is the result of disturbed renal circulation, ischæmia, stasis or retardation of the blood in the renal vessels; the renal epithelium shares in this lessened resistance of the vascular system, and hence the easy filtration and glomerular permeability to the passage of albumin. In other cases microbes introduced into the blood are eliminated by the urine, often without trace of any lesion. On the other hand, either from the virulence of the germs or the vulnerability of the organ, colonies may be produced, and in such cases the microbes which are arrested in the kidneys originate toxic substance which causes organic albuminuria and nephritis. At other times the pathogenic agent is localised at some other point of the system (intestinal toxæmia, diphtheria), and its toxins are transported to the kidneys. With regard to cyclical and orthostatic intermittent albuminuria, the ætiology is bound up with arthritism, neurasthenia, family heredity; the prognosis is relatively favourable and the clinical interpretation an altered metabolism. Vincent Dickinson.

Fœtal broncho-pneumonia and infantile bronchiectasis (*'La Presse Médicale,' July* 4, 1908, *p.* 427).—**A. Romme** quotes a case brought before the Soc. de Pediat. (March 17, 1908) by Apert, of a girl the subject of congenital syphilis, who had had for two years purulent expectoration as the result of a febrile affection of the lungs when two years old. The nummular sputum, which was more copious in the morning, contained pneumococci. Examination showed a suppurating cavity at the base of the left lung. The diagnosis was interlobar pleurisy in a congenital syphilitic, but was not accepted. Others thought it bronchial dilatation of syphilitic origin, surrounded by dense pulmonary tissue, and this was found correct at a subsequent surgical operation. **Kervily** has taken up the subject (*'l'Obstetrique,'* 1908, *p.* 212), and his work is based on the histological study of four fœtuses attacked with bronchiectasis (poumon polykystique). In two cases where there was congenital syphilis, the lesion was localised to one pulmonary lobe, and consisted of bronchiectasis with lesions of broncho-pneumonia. Round the dilated bronchioles there was marked congestion with interstitial hæmorrhages, distension of lymphatics and diffuse inflammatory infiltration of the connective tissue. The pulmonary vesicles contained blood, white corpuscles and desquamated epithelium. The bronchioles were filled with a thick pus of mono- and polynuclears. Some, without containing pus, were the seat of a cystic dilatation, and in places the walls were ulcerated. Balzer and Grandhomme report a similar case. Kervily thinks that in a lung in process of development, dilatation of the bronchioles is one of the modes of inflammatory reaction, and this may be caused equally well by a micro-organism like the spirochæta as by the irritation due to an adenomatous neoformation, the direct cause of which is obscure. VINCENT DICKINSON.

Experimental researches on changes in the blood, liver and spleen, in chronic intoxication of intestinal origin (*'La Pediatria,' May,* 1908, *p.* 328).—**E. Sassoli**, by injecting puppies with fæcal extracts prepared from children suffering from gastro-enteritis, found that a rise of temperature was produced and the gain in body-weight was diminished but not arrested. The red corpuscles were diminished by a million on an average, the hæmoglobin was diminished in a greater proportion, so that the globular value was lessened, showing a marked hæmolytic action of fæcal extracts. There was a slight increase in the nucleated red corpuscles, which were normally present before the experiments. Such increase depends, as the author thinks, on the stimulating action of the toxin on the erythroblastic formation. The number of white corpuscles was definitely increased at the expense of the polynuclears. Only in one case was the spleen enlarged, while the liver was always enlarged and congested, and presented evidence of degenerative lesions of its parenchyma. This seems to indicate the much greater susceptibility of the liver to toxic products of intestinal origin. VINCENT DICKINSON.

Contribution to the study of congenital cysts on the floor of the mouth (*' Gaz. Med. Ital.,' March,* 1908, *No.* 12, *p.* 111).—**A. Girardi** states that there is one group in which the epithelium has all the characters of cutaneous (dermoid), and another group in which stratified pavement epithelium and sometimes cylindrical ciliated covers a derma rich in lymphoid tissue (mucoid). The first is of ectodermic origin, the latter endodermic. A case is reported at length which seems to point to a mixed origin. From the bronchial arches originate the various organs of the mouth and neck, while the bronchial clefts normally disappear entirely. It may happen, however, through abnormal development, either that the margins of the bronchial clefts or pharyngeal pouches do not become completely united, or that even though the edges join the didermic section of closure disappears. In the former case we have cysts and fistulæ with characters of skin (dermoid); in the second case, cysts with stratified pavement epithelium; in the third case cysts with epithelium of a mixed character.

VINCENT DICKINSON.

The ætiology of coxa vara (*'St. Petersburg. med. Wochens.,' December* 15 *and* 22, 1907).—**Weber** regards coxa vara as undoubtedly allied with some forms of scoliosis, genu valgum and flat foot. It is highly improbable that rapidly increasing and excessive weight of body could produce any twisting of the normal neck of the femur, a view sustained by Hofmeister and others. There is some evidence that we are dealing with a thyroid atrophy which leads to some myxœdema-like fatty degeneration, and to some bony softening in the nature of osteo-malacia in the neck of the femur. Work should be devoted to this point, which may be the explanation, not only of coxa vara, but of the other allied deformities alluded to.

M. D. EDER.

Kidney lesions in the infant: pathological aspects ('*Arch. of Pediat.,*' *vol.* xxv, 1908, *p.* 324).—**R. L. Thompson.**—The paper is based on the post-mortem findings in fifty infants. In twenty-three cases, including fourteen of broncho-pneumonia, death was due to bacterial infection. The twenty-seven non-infectious cases included twenty-two of primary infantile atrophy. Though many of the cases showed albumin and casts during life, in no case did the autopsy reveal sufficient pathological change to justify the diagnosis of nephritis. Though severe kidney lesions sufficient to cause death or to damage the kidney permanently are rarely found in infants, extreme congestion and slight degenerative processes are very common. J. D. Rolleston.

Pathology of tuberculosis in children ('*Arch. of Pediat.,*' *vol.* xxv, 1908, *p.* 277).—**J. McCrae.**—Of children under five years, four fifths are probably infected by air-borne human bacilli, since they are more exposed to home infection than adults. One fifth may show the bovine form of tuberculosis, which is characterised by its slow progress, tendency to overgrowth, and dry caseation which affects the lymph glands throughout the body. Children fed on pasteurised milk are practically free from tuberculosis. Thus in 747 autopsies, 60 per cent. of which were on children of three months or less, McCrae found tuberculosis only five times. Limitation of tuberculosis to the bones and joints he regards as due to lowered bacterial virulence and the heightened resistance of the individual. Meningeal tuberculosis in his experience was merely a localised evidence of general tuberculosis, *e. g.* out of twenty-nine cases of tuberculous meningitis, twenty-one had generalised tuberculosis. In generalised tuberculosis he found the lungs affected in 95 per cent. In more than half of the cases the organs were affected in the following order of frequency: lymph nodes, spleen, liver, intestines, meninges and kidneys. Tuberculoma in the brain was about one fourth as frequent as meningeal involvement.

J. D. Rolleston.

Bacteriology of perlèche ('*Journ. de méd. de Bord.,*' 1908, *p.* 309).—**Auché**, in the examination of 10 cases, found the streptococcus present in all, in one case alone, in one associated with *B. coli*, in one with an undetermined bacillus, but in most cases with the *Streptococcus albus* or *aureus*. He thinks that the constancy of the streptococcus and its predominance over all the other organisms present are in favour of its being the pathogenic agent. Experiments on rabbits, however, have hitherto failed to produce the lesions. Unlike Lemaistre, who in 1886 described a *Streptococcus plicatilis* as the pathogenic agent of perlèche, Auché does not regard the organism as a special variety of streptococcus but as the ordinary form which under certain influences produces epidemics of perlèche, while on other occasions it gives rise to pemphigus neonatorum, puerperal fever, etc.

J. D. Rolleston.

The blood in hæmophilia ('*Med. Press,*' *July* 1, 1908).—**Szaly** has examined four typical cases of hæmophilia. According to some the condition is due to high blood-pressure, but this, the author thinks, is improbable, since diseases associated with high blood-pressure, such as chronic nephritis, do not usually present hæmophilic symptoms. In the cases in question the Riva-Rocci instrument gave normal or sub-normal readings. Microscopical examination of the blood showed only a moderate relative diminution of the polymorphonuclear cells with a relative increase of the lymphocytes. The absolute number of leucocytes was normal or diminished. The blood-platelets were counted in two cases and were found not to be increased in number. The alkalinity of the blood, the dry residua of the serum, the freezing point and the amount of fibrin in the blood were not altered. As regards the coagulation-time, it was found that in the intervals between the hæmorrhages clotting was much delayed, but normal, or even hastened, during severe bleeding. The rapid clotting during bleeding, despite continued hæmorrhage, is probably due to an abnormal quality of the vessel-walls. Under normal conditions the latter probably furnish certain substances necessary for the production of fibrin-ferment (thrombokinase) locally at the site of injury, so that a clot will soon obstruct the opening in a vessel. In hæmophilia the torn edges of the vessel do not supply the blood with this substance, hence no local clot forms. The imperfect clotting during the intervals is due to a similar deficiency on the part of the blood-cells and the hæmato-poietic apparatus. Chemical changes in the vessel-walls will also explain the occurrence of spontaneous hæmorrhages and the reported cases of hæmophilia of single organs (Senator's renal hæmophilia). Very little can be done for the disease except to improve the general constitution. Local hæmorrhages are best controlled by compression, gelatin and adrenalin, but the latter two drugs should never be injected subcutaneously. The local application of thrombokinase is not likely to do much good, and there is, as yet, no drug from which good results can be expected on internal administration. T. R. Whipham.

Therapeutics.

Treatment of eczema in infants by thyroid ('*Scot. Med. and Surg. Journ.,*' *May*, 1908).—**Eason** details five cases of eczema in infants and young children which were treated entirely by small doses of thyroid extract with gratifying results. In all the cases the child had been ill for a considerable time and had shown no improvement under careful and persistent local treatment. To young infants one quarter of a grain of thyroid extract was given daily and in a week the eruption was very much better, while at the end of a month or five weeks it had practically disappeared.

T. R. Whipham.

Treatment of chorea ('*Med. Record,*' *February*, 1908).—**Koplik** lays stress on the dangers of the indiscriminate use of Fowler's solution in the treatment of this disease. He finds that patients treated with this drug usually have albumin in the urine, and even casts and blood may be found. Albumin appears before any other sign of toxic action of the drug, and is an indication for stopping its use. Fowler's solution on standing becomes stronger, so that what is supposed to be a small dose is in reality a large one. Cases do as well without the use of arsenic. The treatment recommended is a modified rest cure with some mild sedative, such as trional, and, where indicated, strychnine as a tonic. Hydro-therapy is always useful. Salicylate of soda may be tried, but only if well borne. Digitalis should not be used. The author believes that isolation and darkened rooms are not indicated, as children do much better with quiet companionship and fresh air. T. R. Whipham.

Serum therapy in cerebro-spinal meningitis ('*Journ. of Pathology,*' *April*, 1908).—**McKenzie** and **Martin**, owing to the difficulties attending the determination of the opsonic index when dealing with the meningococcus, are led to the conclusion that human serum exercises a bacteriolytic power over that organism. Smears of the meningococcus were made on serum from healthy individuals and also on serum from cases of acute and chronic cerebro-spinal meningitis, and from these the authors concluded that (1) the serum of normal human blood contains substances in many cases which are bactericidal to the meningococcus; (2) these substances are increased in amount or activity in the serum of patients suffering from acute or chronic cerebro-spinal meningitis, and the serum of a patient who has recently recovered from such an infection shows evidence of the presence of these substances in a still greater degree; (3) the bacteriolytic action depends on the presence of a thermostabile immune body, which requires the presence of a thermo-labile complement to complete the process; (4) the cerebro-spinal fluid does not contain substances which are bactericidal to the meningococcus *in vitro*, and the methods employed failed to demonstrate the presence of either immune body or complement. These conclusions seemed to show that the serum of patients who had recovered from cerebro-spinal meningitis was a valuable remedy for the disease. Consequently some serum was obtained from a man, aged 21 years, who had recovered from the disease, and was injected sub-durally by lumbar puncture. Of sixteen acute cases thus treated ten recovered and six died. Four chronic cases, however, all died. These results compared favourably with cases not so treated, and the authors urge a further trial of this method. T. R. WHIPHAM.

Intestinal lavage with red wine for infantile diarrhœa (*'La Clin. Infant.,' April*, 1908, *p.* 251).—Long before the investigations of Sabrazès and Mercandier on the antiseptic action of sour wine the ancients used wine for washing wounds, and **F. Houssay**, recognising that wine, being a tanno-alcoholic solution, was a natural and physiological antiseptic, had the idea of using it in the intestinal lesions of children attacked with summer gastro-enteritis. His procedure is to give the first day two or three lavages of one litre of ordinary red wine of 7 to 8 per cent. alcoholic strength, the following days two litres, ceasing when the stools became normal. A double-current tube facilitates the operation in infants where the attack is complicated with convulsions. Of about fifteen thus treated out of a number of cases of infantile diarrhœa Houssay draws attention to four of extreme severity, which enabled him to affirm the efficacy of large lavages of warm red wine in intractable and prolonged cases. It is necessary to avoid using old wine, rich in alcohol, but to choose one a year old of 7–8 per cent. alcoholic strength. It is important also to give it as a lavage and not as an enema. In cases of chronic enteritis in older children the same treatment may be used, but with a certain reserve, since it is more difficult to give a lavage to such children than to infants. One of the enormous advantages of this treatment is its simplicity, its handiness, and the promptitude with which it can be done. Houssay recalls the fact that since 1880 enemata of wine have been used with success in the treatment of the diarrhœa of Cochin China, and considers that if intestines so profoundly affected can tolerate them, there is nothing to prevent the digestive tract of a child, less affected pathologically, from immediately feeling the good effects and antiseptic and tonic action of the alcohol and tannin. Houssay remarks that this is the first year in which he has not had, in spite of the gravity of the cases under his care, any deaths from summer diarrhœa to record.

VINCENT DICKINSON.

Dressings of horse-serum in the treatment of burns ('*La Presse Médicale,*' *June,* 1908, *No.* 48, *p.* 380).—**R. Petit** employs the following technique in children. The area adjacent to the burn is first thoroughly cleansed by boiled water, soap and brush. Bullæ are then opened antiseptically, the epidermis being preserved and the whole surface bathed with oxygenated water and then with sterilised saline solution of 10 per cent. The burnt tissues are then covered with several layers of sterilised gauze soaked in warm horse-serum; over this two or three compresses of warm sterilised saline solution are placed and the whole covered with a piece of taffetas and wool. This dressing is changed at first every twenty-four hours, later every two days, the burn being well irrigated with warm saline solution. Later, after the sloughs have come away and the epidermis is softened under the moist dressing, the taffetas is left off and the circumference of the wound smeared with a little sterilised vaseline. Still later, when the granular surface is well raised, the liquid serum is replaced by dried serum which is dusted on the wound and covered with a dressing of sterilised saline solution. The effects of this dressing were very remarkable in the ten cases in which it was tried; cicatrisation took place rapidly without any scarring in burns of the second degree. The author says that in any given burn we do not know to what depth the tissues are destroyed; a large number of cells are not killed but stupefied by the action of the heat; if left to themselves, or still more, if hampered by antiseptics, they succumb and form further elements for toxic fermentation; if, on the other hand, they are kept in a physiological bath, they revive and can take part in the repair of the wound. The leucocytosis produced locally by the action of the serum leads to the same result. Certain points in the margin of some burns which seem about to slough are seen to revive under a chemiotactic dressing instead of sloughing, and it may be the same with nerve filaments, which thus escape degeneration. This would explain the rapid and progressive healing.

VINCENT DICKINSON.

Morphine in croup ('*La Clin. Infant.,*' *May,* 1908, *p.* 266).—**A. Lesage** and **M. Cleret** are of opinion that the number of intubations necessary in cases of laryngeal diphtheria may be diminished by the use of morphia. Their cases method is the following: In the case of a child who has had for some hours attacks of threatened asphyxia, they do not intubate but give a hpyodermic injection of a solution of 1 per cent. chlorhydrate of morphine in doses of $\frac{1}{4}$, $\frac{1}{3}$ or $\frac{1}{2}$ c.cm. according to age. Immediately afterwards an injection of 80 to 100 or 120 c.c. of Roux's serum is given. In the great majority of these cases the infant goes to sleep and the inspiration becomes calm and regular. This sleep lasts five or six hours, during which the serum acts, and on wakening the infant is practically cured. In certain cases, which, however, are rare, the morphine does not produce a complete calm and asphyxia is threatened. In these cases we must be ready to intubate, but the use of morphine is really a method of armed expectancy, and if it does not succeed there is always time for intubation. In the case of children who are cyanosed and dying, immediate intubation is necessary, and at the same time the injections of serum and morphine given. The advantage of the use of morphine in these cases is to reduce the duration of intubation to a minimum; the tube may be removed at the end of twelve hours, as by this time the serum will have acted. If there are fresh threatenings of asphyxia the injection of morphine can be repeated and thus a fresh intubation may be avoided, which is more harmful to the larynx than the initial intubation.

In these serious cases morphine is a valuable adjunct, which helps in avoiding the complications due to the prolonged presence of the tube in the larynx.

VINCENT DICKINSON.

Ophthalmology.

Injuries to the eyes of the child incident to instrumental delivery (*'Interstate Med. Journ.,' April,* 1908).—**Green** gives a formidable list of injuries to the eyes attributable to instrumental delivery, which he has collected from the literature. The most frequent form of injury is that to the cornea, which may consist of a transient diffuse opacity, or of linear or irregular stripes of opacity which are permanent. The first depends upon œdema of the cornea, and the second upon tears in Descemet's membrane. Fracture of the frontal bone and orbital roof is accompanied by infiltration and œdema of the eyelids and by moderate exophthalmos. Exophthalmos may also be caused by compression of the skull-bones, or by the blade of the forceps acting in a manner similar to that of the speculum, with which, in the operation of enucleation, the eyeball is dislocated forward. Extensive sub-conjunctival extravasations are usually accompanied by other injuries, such as hæmorrhage into the anterior chambers and crushing of the frontal bone. In dealing with paralysis of the ocular muscles, a case is quoted in which there were scars over the left malar bone and on the right side of the lower jaw, accompanied by left abducens paralysis, optic atrophy, and pigment-formation in the retina; and another in which both the sixth and seventh nerves on the right side were paralysed from forceps applied behind the right ear and partly in front of the left. Hæmorrhage into the anterior chamber, though of itself frequently of little moment, is usually accompanied by severer injuries, such as crushing of the frontal bone, choroidal and retinal hæmorrhages, etc., and its occurrence is, therefore, of grave prognostic significance. Injuries to the lids may be associated with ocular paralysis or subsequent ectropion. As regards the eyeball as a whole, the globe has been found completely crushed and in other cases completely avulsed. The above are described as the principal ocular injuries incident to forceps delivery, but allusion is also made to deep intra-ocular hæmorrhage, abscess of the orbit, traumatic cataract, infantile glaucoma, irido-dialysis, fracture of the lachrymal bone, tear of the cornea and sclera, rupture of the choroid, exophthalmos, and traumatic paralysis of the levator palpebrarum and rectus superioris. On the other hand, injuries to the eye are not invariably the result of forceps. Natural births have been described with lesions varying in severity, from simple œdema of the lids to complete avulsion of the globe, and including fractures of the orbit, depression and fracture of the frontal bone, facial palsy with resulting lagophthalmos, exophthalmos, diffuse opacity of the cornea, paralysis of the abducens and of the elevator and depressor of the eyeball. Considering the responsibility of the obstetrician the use of the forceps must not be too severely condemned, but the possibility of severe injury to the eye of the child should always be borne in mind, and any marks of violence after a difficult labour should lead to a thorough examination both of the external ocular structures and of the deeper parts of the eyes.

T. R. WHIPHAM.

Otology, Laryngology, and Rhinology.

Ear disease in infancy and childhood (*'Amer. Journ. of Obstet.,' April,* 1908).—According to **Kenefech** the otitis of children may be divided into two classes: (1) that arising within the tympanum from specific poisons in the circulation; (2) that caused by infectious processes from inflammation of structures in the immediate neighbourhood. The first is associated with some concomitant general disease, such as syphilis or tuberculosis, while the second, which is the more frequent, arises from hypertrophied lymphoid tissue in the pharynx and pathological conditions of the tonsils. A mass of adenoid growths, both on account of its own circulation and the pressure it exerts on the neighbouring structures, keeps up at the mouth of the Eustachian tube a constant vascular engorgement which extends to the tympanic cavity and its contents. In other cases adenoids within the fossæ behind and above the Eustachian cushion seriously impede the physiological action of the muscular structures concerned in opening and closing the pharyngeal orifice of the tube. While the child is in the upright position by day these growths give hardly any evidence of their presence, but at night they become engorged even to the extent of impeding respiration, thus damaging the general health and causing harm to the auditory apparatus. In treating cases of acute otitis the author's aim is to preserve the tympanum intact and to restore its function by slitting, not piercing, the drum posteriorly, so as to drain the tympanic cavity from the lowest point, and this is done whether spontaneous rupture of the membrane has occurred or not. Frequent irrigation with saline solution is followed by healing in most cases in from ten days to a fortnight. The naso-pharynx should also be cleared out as soon as the age and condition of the patient will allow.

T. R. Whipham.

Otitis media ('*Deut. med. Zeit.*,' *No.* 31).—**Neumann** also states that middle-ear disease arises either *per contiguitatem* from the Eustachian tube, or is, more rarely, hæmatogenous. The secretion is at first usually sero-mucous. After spontaneous or artificial perforation it becomes purulent from infection either along the Eustachian tube or through the external auditory meatus. The exudation is purulent from the first only in cases connected with acute infective diseases. At the commencement of acute otitis media warm applications soaked in a solution of liquor plumbi should be ordered, one to be passed into the ear, and others to be fixed behind, and in front of, and over the ear by means of some waterproof material. Cold applications are not so useful. These dressings should be continued until either recovery or perforation takes place. The author deprecates the Politzer procedure and also the use of the syringe. The auditory canal should be cleansed by dropping in a 1 to 8 per cent. of a H_2O_2 solution and the removal of the softened discharge with swabs of lint. After this a tampon of cotton-wool smeared with red precipitate ointment is left in the canal, or as an alternative one soaked in a 1 to 10 per cent. solution of chloretone may be used. At the same time the treatment of any other conditions must not be neglected.

T. R. Whipham.

The treatment of diphtheria and of the persistence of diphtheria bacilli in the throat with pyocyanase ('*Deutsch. med. Wochens.*,' *April* 2, 1908).—**Schlippe** concludes from extended personal observations that pyocyanase apparently hastens the disappearance of the diphtheria membrane from the throat and lessens markedly the fœtor of the breath. It is not, however, a specific, and should never be used in place of the serum, but in conjunction with it. In severe septic cases it has no effect. Neither is it successful in removing persistent diphtheria bacilli from the throats of those who have recovered from the infection.

Macleod Yearsley.

Surgery.

Congenital absence of ribs (*'Arch. of Pediat.,'* 1908, *p.* 454).—**J. L. Porter.**—A girl, aged 4½ years, had congenital scoliosis and asymmetry of the thorax, which had both grown rapidly worse during the first three and a half years. X rays showed twelve fully-developed ribs on the right side, while on the left four ribs and vertebræ were missing. Some of the remaining eight were rudimentary. With an ordinary plaster-of-Paris jacket the child did not do well, so Porter proposed to apply a plaster jacket from the pelvis upwards, leaving a space on the concave side of the curvature so as to facilitate respiration and give room for development.

J. D. Rolleston.

Congenital dislocation of the patella (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 378).—**De Ruyter Howland.**—Examination of a newborn male after an easy labour showed that the right knee was double-jointed. The patella was found below the external condyle of the femur, and was replaced with little difficulty. The leg was kept in a circular plaster bandage for three days, and then set free. There was no return of the deformity.

J. D. Rolleston.

Congenital curvatures of the leg bones and infantile pseudarthroses (*'Gaz. des Hopitaux,' September* 5, 1907).—**Rabère,** in this paper, deals at some length with the allied group of conditions affecting the lower part of the leg bones in infants, and, including curvatures of congenital origin, the so-called intra-uterine and spontaneous fractures of infants and the defects of union, which so commonly result in such fractures or after operation for the correction of such deformities. He publishes a typical case in which there had been from birth a marked curvature forwards of the tibia. At the age of nine months the child sustained a fall. Nothing unusual locally was noticed by the mother as the result of the accident, but three months later, when the child was admitted to the hospital, a false joint in both tibia and fibula at the junction of the lower and middle thirds of the leg. The author describes the characters of these congenital curvatures, laying stress on the frequency of atrophy of the limb distal to the curve, on the presence of talipes equinus, and on the presence of scar-like conditions of the skin at the level of the curve. He agrees with the hypothesis of Dareste that these curvatures are produced by amniotic bands. In undertaking the treatment of these deformities the likelihood of osteotomy resulting in a pseudarthrosis must always be borne in mind. Of the scarcely numerable methods which have been used in the treatment of the intractable pseudarthroses of the leg-bones in children, the author speaks most favourably of that devised and successfully carried out by Reickel, which consists in the implantation of an osteo-periosteal flap from the sound leg into the gap in the tibia. The legs are fixed together and the connection of the flap with the sound limb is separated after about twenty days.

Wilfred Trotter.

Congenital dilatation of the colon (*'Société de Chirurgie,' November* 7, 1907; *'Gaz. des Hopitaux,' November* 12, 1907).—**Tuffier** reported the case of a young woman, aged 20 years, who had had a large abdominal tumour for some years. She had long suffered from digestive troubles, and had had obstinate constipation all her life with much pain, accompanied by visible and tangible peristalsis. The tumour was median, hard, painless, movable transversely, but not up and down. A diagnosis of dermoid cyst was made. At the operation a dilatation of the pelvic colon was found. There was no sudden transition from normal to abnormal gut. An enterotomy was done and an enormous quantity of fæcal material was removed. The incision in the intestine was closed. Two months later the patient returned. All the symptoms had come back. Laparotomy was again done. Entero-anastomosis between the descending colon and the rectum was established, and the diseased loop excluded by purse-string sutures. Six months later the patient was in excellent condition, but still had some constipation. Tuffier had collected eighty-eight cases of the disease. In no case had any obstruction of the dilated loop been found. Sixty-five of the patients were under twenty, twenty were less than a year old; several were over forty and one sixty-five. In thirty-two cases operation had been done with nine deaths. Of the operations Tuffier recommended colectomy with or without the previous establishment of an artificial anus. It had been done five times with one death. Wilfred Trotter.

Ranula of unusual size (*'S. African Med. Rec.,' March* 10, 1908).—**Bale** reports the case of a native girl, aged 13 years, who had had a swelling in the neck for three years. The tumour occupied the right submaxillary region and extended in a spindle-form along the anterior border of the sterno-mastoid muscle to the level of the cricoid cartilage. Under the point of the tongue a swelling was found which proved to be in communication with the tumour in the neck, inasmuch as pressure on the one caused enlargement of the other. The cyst was eventually excised and proved to be a large bi-lobed ranula containing glairy mucoid fluid of a reddish colour. T. R. Whipham.

A case of enteric intussusception (*'Lancet,' May* 30, 1908).—**F. de Havilland Hall** records the case of a boy, aged 5 years and 8 months. He complained at first of pain in the left popliteal space and he was unable to bend the leg. The same evening a swelling the size of a marble was detected. The child was kept at home and next day he became very dull, but was able to walk better. Three days later he complained of itching in both legs and red spots were noticed. In the evening he had great pain in the legs and feet and could not walk. Next day he was seen by a medical man, who diagnosed purpura. The temperature rose to 102° F. As the joints were swollen rheumatic fever now suggested itself. Nine days after the commencement of the illness the abdomen became swollen with pain and tenderness over the lower parts. Constipation and vomiting set in. He was therefore sent to hospital. He was given two enemata, when some hardened fæces came away. On the following day the child looked very ill, with marked pallor. The vomit now had a distinctly fæcal odour. There was great abdominal pain, especially in the region of the umbilicus. The temperature ranged from 99·2° to 97° F., and there were purpuric spots over the lower extremities and to a less extent over the sides of the abdomen. The abdomen was opened and an enteric intussusception was found by the operator, Mr. W. G. Spencer. One piece of the intestine was gangrenous. Resection and anastomosis were carried out. Two days later the child died. No post-mortem examination was made. This is an extremely instructive case. Henoch's purpura was naturally enough the diagnosis made at first and this caused delay in operating. Fæcal vomiting such as occurred in this case is, as Dr. Hall points out, a sign of grave significance, and should have indicated immediate operative interference.

James Burnet (Edinburgh).

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Original Articles.

DEAFNESS IN RELATION TO SCHOOL MEDICAL INSPECTION.

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The enormous importance of perfect hearing in the intellectual and moral development of children, and the serious handicap to them of moderate or even slight degrees of deafness, has only recently been comparatively widely recognised, and in the medical inspection of schools the inspector should never forget that the prompt recognition of imperfect hearing is one of his most responsible duties. Until quite lately the slightly deaf child and the child with insufficient nasal breathing were passed over as "inattentive," "stupid," or "refractory," thus becoming neglected educationally, or undergoing unmerited and unjust punishment. Such children, easily dealt with when the cause of their defect is known, do not get a fair chance in the world of education, and become ignorant wastrels, to swell the ranks of the unemployed, the paupers and criminals, through no original fault of their own.

A child at school requires to "have all its wits about it." It must be on as good a footing as its class-mates in its efforts to acquire knowledge. Its activity should be as normal as possible. Hampered by deficient hearing or deficient sight it is immediately at a natural and obvious disadvantage. In exceptional cases this disadvantage may be counterbalanced by special intellectual brilliancy, but such rare instances cannot be taken into consideration in dealing with the average child. The usual result is that the child inevitably falls below the standard set by its class-mates, and either keeps the whole class back or falls hopelessly out of the running. The evidence afforded by statistics proves that it is usually among the children at the tail of the class that defective hearing is found, and, further, that the worse the hearing the lower the child stands in the class-list.

The primary and most simple idea of an object is formed by the revival in the mind of the impressions that the object has made upon the sensorium through the sense-organs, and each percept or idea of an object is the complexus of images received through the different senses—sight, smell, hearing, taste, touch, and the muscular sense, some one of these being usually the "master sense." The blending of these sensory ideas is probably due to the presiding intelligence, which belongs to the cerebral cortex as a whole. As education proceeds, and language is developed, each object-percept becomes related with its name, these names being the verbal symbols of the simplest ideas which we have of things.

In the language of a nation certain articulate sounds become the symbolic representatives of certain definite ideas, learned by each child first as sounds, later as symbols. *The sounds are first registered in the cortical centre for hearing,* and it is under the guidance of this centre that the child trains the motor centre to articulate the sounds, thus getting second images imprinted upon the cortical motor centre for speech. The motor reproduction of sound becomes so interesting that the child reproduces many sounds by *echolalia,* without attempting to understand them. Before echolalia is exhibited, however, the child obtains a number of word-memories imprinted upon the auditory centre before he can articulate a single one of them, and these are even associated with their proper meanings. At this stage the education of the receptive centre is ahead of that of the reproductive (motor) centre.

This short explanation will serve to demonstrate how much depends not only upon the auditory receptive centre, but upon the integrity of the channels—the auditory conductive apparatus—which carry the sounds to the centre.

When there is any defect of hearing the development of speech suffers, and with it the mental development of the child. The sensations which give rise to hearing consists practically of two elements—*tone* and *noise*,—both of which possess the qualities of pitch, intensity, and timbre. From the multitude of sounds which surround the child the most important to him is *speech*. Speech ranges through some three octaves, from C (128) to C^2 (512), according to Kerr Love (2), from 16 to 4032 vibrations, according to Laubi (3). The latter estimate probably refers rather to the singing voice. In order to understand how defective hearing affects the education of the child, it must be ascertained what escapes him. He is unable to perceive noises of slighter intensity, such as the softer sounds of the winds and the chirping of insects, and, as it is these sounds of slighter intensity which go to form the "voices of Nature," he loses much of the education which the natural world would otherwise afford him. He is unable to distinguish the myriad of sounds met with in the woods and country side, the singing of birds and the like, and he loses also to a large extent the finer shades of human vocal expression. The hard-of-hearing child not only hears less than his normal fellows, but he also hears differently to them. As single noises and tones are summations of partial tones, they become altered by the loss of some of their constituents and also in timbre. As Laubi puts it : "The intellectual development suffers. As all perceptions originating from soft sounds are wanting, a great defect in conceptions follows. Such a child does not know why a noise is at one time called humming, the next time murmuring, or singing, buzzing, etc. Many conceptions are also incomplete, for instance, in 'watch' the part representing 'ticking' is absent; with the idea of 'bees,' buzzing may be wanting."

Besides this the important development of speech suffers in direct proportion to the degree of deafness and the period of its onset, many of the speech-sounds not being heard, or being heard in an altered tone. As a result speech is slowly learned, or various errors of speech appear, the child slurring consonants, which are either not heard or heard in an altered form. A poor comprehension of speech and its delayed development has the further result that the chief stimulus of thought, namely conversation with those older than himself, is partially absent. Consequently such children are sufficiently handicapped to be poor at their lessons, thus gravitating to the bottom of the class; they are less developed mentally, and this gap between them and their class-mates becomes accentuated as their school life goes on. Even those who suffer from deafness in a minor degree feel their defect, and their mental development is influenced for the worse. These are the children that are noticed by their teachers as "inattentive"—children with adenoids and naso-pharyngeal catarrh. It will be found on inquiry that such cases are easily fatigued and vary with the state of the weather. Damp and rainy weather increases their nasal obstruction and accentuates their defects of hearing. If such children are punished they are frequently unaware of the reason, and, being generally shy, without much self-reliance, and often awkward of speech, punishment merely frightens them and renders them less easy to manage. The medical inspector should be on the alert for such cases, and teachers cannot be sufficiently warned that children who make little progress and are inattentive should be presented for medical examination before they are put down as refractory.

It will be appropriate to consider here some of the effects of adenoids upon the mental condition of the child, apart from the difficulties of education to which concomitant deafness may give rise. The condition to which Guye, of Amsterdam, in 1887, applied the term *aprosexia* is given by various authors as occurring in from 35 to 70 per cent.—a wide margin. In an investigation, the particulars of which I hope soon to publish in the BRITISH JOURNAL OF CHILDREN'S DISEASES, I found aprosexia present in 73 of the 1563 children examined, or 1 in 21·41, and all of these had adenoids. In an analysis of 307 consecutive cases of adenoids made in 1901 (4) the symptom was marked in 17, or 1 in 18·05. In all these the nasal obstruction was severe. Crowley (5) found aprosexia present in 28 per cent. of his cases, and considers that in many cases the mental dulness is more apparent than real, the true cause being the deafness. The deficient mental condition consists chiefly in a want of concentration, and any effort in that direction appears to exhaust children with marked adenoids in a very short time. It is probably due to the combined effects of deficient blood oxygenation and a hindrance to the cerebral hæmic or lymphatic circulation. It will generally be found that, apart from aprosexia, the effects of adenoids upon the temper and general disposition of the child are very noticeable. Many adenoid children are fretful, sulky, or liable to outbursts of passionate temper, and difficult to manage. I have known children to change markedly in this respect after an operation. The blood changes are important in regard to aprosexia. Lichtwitz and Sabrazes (6) found that children with adenoids have a mild form of anæmia and leukæmia, with an increase in the large mononucleated cells, viz. the lymph cells and eosinophiles, taken by the percentage method and by absolute count per c.mm., and a relative and absolute decrease in the number of polynucleated cells. After the removal of adenoids they found that the blood tends to return to the normal.

Defects in hearing in school-children will be found to vary from slight departures from the normal to severe deafness, causing partial or complete mutism. The physical examination of the ears need not be entered into here. It should, if possible, precede functional testing, in order that plugs of cerumen or accumulations of discharge, etc., may be removed, in order to discover the absolute amount of hearing the child possesses. The methods at disposal for testing the hearing are the watch, the bell, the voice, the Galton whistle, and the tuning-fork. Of these the watch should be discarded as misleading and useless. The tick of a watch is a complex of musical sound and noise, and some deaf persons will hear the former whilst others hear the latter; moreover, every watch varies in its tick according to the condition of the winding, and some watches tick more loudly than others. The bell is required only for the very deaf, and it should have its clapper fixed by a spring to the outside of the bell, in order to give a single stroke. The usual form of Galton whistle sold is unreliable, and, for motives of accuracy, it is best to use the Edelmann-Galton pfeife. It is required for testing the acuity for high sounds. The most useful tuning-fork to use is that known as Lucae's, provided with a vulcanite foot, and clamps to prevent overtones. The "Gardiner-Browne" fork is misleading. A C fork, of 128 double vibrations per second, should be employed; a stop-watch should be at hand to register the difference between the child's bone-conduction and that of the examiner (presumed to be normal).

The functional testing of the hearing takes time, and when the medical inspector has to examine a large number of children he cannot do more than detect those who are deaf, and either retain them for further testing, or refer them to an otologist. I am of opinion that consulting otologists should be appointed for this purpose. Of all the tests for hearing that of speech is the most important, and therefore the one to be relied upon for the medical inspection of school children. The tests should be applied in the presence of the teacher, who may be able to give the doctor important information about the child. A normal child's ear can hear whispered speech easily at from 20 to 25 metres (22 to 27 yards). To obtain a uniform whisper the examiner should empty the chest of air and whisper with the last breath, *i.e.* with the residual air. It may be noted here that special attention should be paid to sibilants, the high-pitched soft *g*, *f*, the explosives, and the letter *r*. Hissing sounds (*s*, *sch*) are usually heard worst in diseases of the conducting apparatus, *f* in labyrinthine disease and *r* in defects of the tympanic membrane. In testing with speech the ear under examination should be towards the doctor and the other ear firmly closed by the teacher; the child's eyes should also be closed or covered.

In the ordinary medical inspection of school-children it is unlikely that the medical officer will proceed further than the whisper test, by which he will be able to segregate the deaf cases and direct their further examination by an otologist. By following this routine and referring all deaf cases to an official otologist, no matter what the degree of deafness may be, there is a better chance afforded of classification and of timely advice as to the seeking of treatment. By such means a considerable number of cases of early deafness will be detected and prevented from progressing to marked degrees.

The method of roughly classifying children by the whisper test into bad deafness (below 2 metres), medium deafness (2 to 4 metres), and slight deafness (over 4 metres) is a good one for all practical purposes of routine inspection. It must be remembered that, of the whole cases that will be detected by this method, some 50 per cent. can be cured, and of the remainder a large proportion are capable of considerable improvement, and it will be a great triumph for medical inspection if by these means a number of children thus have their important sense of hearing preserved. It means an augmentation of the number of normal, self-supporting citizens, and a corresponding decrease of paupers and criminals—actual and potential.

To sum up, all pupils should be examined as regards their hearing in the first year of school life. This examination should consist of a preliminary inspection of all children, with testing of hearing acuity, by the school doctor, and a special examination by an otologist of those found wanting. Both examinations should be repeated for all children kept back in their classes, and in all who have, in the course of the year, suffered from any of the exanthemata or shown signs of ear disease. To make the results of practical value, the examinations should be made in the presence of the teacher, and every case followed up as regards the seeking of treatment.

When a child is brought up for examination as dumb, the medical inspector must decide whether it is mentally defective or deaf. He should, therefore, satisfy himself as to: (1) The condition of the hearing; (2) the child's play and general conduct; (3) its habits as regards cleanliness; (4) its affection and manageableness; (5) the condition of the ears, nose and throat.

I now come to the important question of the education of the deaf child. This opens up two points: Where is the deaf child to be taught, and, since this cannot be done to the best advantage without classification, how is the deaf child to be classified? There is no doubt that, of late years, there has been a rising consciousness on the part of the nation that the education of the deaf child is a very serious and important question, and, although England is scarcely yet in the front rank of deaf-teaching countries, it is advancing yearly.

The turning-point of the whole situation in the education of the deaf lies in the proper handling of language, and, indeed, any system of classification is only a means to an end—the mastery of language. No classification can be complete that does not include those children who are semi-deaf or even slightly deaf, for there is absolutely no sharp line of demarcation between them. The slightly deaf and the better cases of the semi-deaf can be perfectly well taught in special classes in ordinary elementary schools; the former may even do quite well in ordinary hearing classes, provided they are placed in the front desks and the teacher can give them special attention. Bezold considers that school work is possible when the child can hear loud speech at two metres, as the teacher can generally manage to place himself at that distance from him; those deaf children, whose minimal distance is less than half a metre, can be taught if the teacher can pay them special attention. I am inclined to think, however, that the latter are better taught in special classes.

Having regard to the large classes, numbering from thirty to fifty, that are to be found in many elementary schools, I am of opinion that, in such classes, it is well-nigh impossible for a teacher to give much individual attention to a semi-deaf child, even though he be placed in the front desks. It would therefore be a wise arrangement if, in each school district, there could be one or two special classes for those children who are too deaf to obtain full advantage of the education offered to them in an ordinary class, and that these special classes should be placed in charge of an elementary teacher who is qualified also as a teacher of the deaf. Moreover, the semi-deaf child is better for the companionship of normal children, and should not, therefore, be placed in a deaf school. This would be obviated by the establishment of the special classes referred to, as the child would be with his normal schoolfellows in the playground, whilst receiving special instruction during his working hours. The placing of such classes in the charge of a teacher of the deaf would further ensure that any of the slighter defects of speech due to his diminished hearing acuity would be corrected.

As regards the worse cases among the semi-deaf, and those children who must be classified as deaf-mutes, there can be no doubt that every endeavour must be made to educate them upon the oral system, the study of each individual child being of paramount importance. Here comes in the question of day schools *versus* residential schools. No modification of ordinary hearing school methods is of the slightest use in these cases; they must be educated in a special day school or residential institution, and, if they fail under the oral method, they must be transferred to a residential school, where the manual or combined systems are taught. Defective deaf-mutes cannot, I think, be properly taught at a day school; they must be placed in a residential institution, to be got at by methods adapted to each individual case by experienced teachers. Normal semi-deaf and deaf-mute children are better in day schools, provided their parents feel their responsibilities sufficiently to help in their education at home; but where the parents are neglectful, alcoholic, or responsible for bad school attendance, and where the home surroundings are morally bad, then the child should, for its own sake and for the sake of its future as a citizen, be taken from the parents and either boarded out or placed in a residential school. At the outset of the deaf child's education the parents should be interviewed, and an endeavour made to impress upon them the necessity of regular school attendance and home educational help; they should be enjoined to co-operate with the child's teachers in giving the oral method every chance, and should be warned against letting home influences degenerate into the substitution of signs for lip-language.

The classification and educational treatment of deaf children of all degrees may, after the above considerations, be tabulated as follows, a scheme adapted from that of Kerr Love's paper already referred to:

Class of deafness.		Educational treatment.
Slightly deaf		Front row in ordinary hearing school.
Semi-deaf	Better cases	Special classes in ordinary hearing school under a teacher of the deaf.
	Worse cases	Special deaf day school, oral residential school, or boarding out and special deaf day school.
Deaf-mute	Oral successes	
	Oral failures	Separate classes of manual alphabet in residential school.
Defective deaf-mute		

As far as my own experience goes, I believe the best system of deaf education, based upon classification, would be as follows: The present period of instruction is from five to sixteen, the last two years being spent at an advanced school. I would either extend this period to eighteen years of age, making the course one of thirteen years, or give the educational authorities power to extend the present shorter period by another two years in special cases. I suggest this for two reasons: (1) The deaf-mute is entitled to as much advanced education and to as advanced teachers as possible; (2) under the shorter period the child is taken from the teacher's influence at the most impressionable age, just at the time when that influence is most felt, most required, and most likely to make a lasting impression. Slightly deaf children should be given every facility in an ordinary hearing school by being placed in the front desks and receiving special attention from the teacher. These children should, however, be carefully watched and inspected medically every six months, a report of progress (especially as compared with that of the normal class-mates) being furnished at each inspection. By this means the doctor can keep in touch with each child, and can make any alteration in the educational treatment fitted to the case.

The better case of semi-deaf child, especially when speech shows any sign of defect, should attend a special class, under a teacher of the deaf, at at ordinary hearing school, so that, whilst receiving the special education that he needs, he can still have the advantage of the companionship of normal-hearing children during playtime. Inspection every six months should be made, as with the slightly deaf.

The worse cases of the semi-deaf should be educated entirely by the oral method at a special deaf school. Both these children and deaf-mutes should, when the home influences are good, be taught at a day school, but when the parents are such as to make the home influences bad, they should be boarded out or placed in a residential oral school. Power should be granted, by legislation, to remove from the parental control altogether such children as are distinctly suffering, morally or physically, from the influence of bad parents.

Oral failures and defective deaf-mutes should be placed in a residential school, there to be taught in the manner best suited to the individual. This school should not be made use of for imbeciles unfit for education; such children would be better taken out of the hands of the educational authorities altogether.

The advanced schools for older children should be recruited from the oral day schools, oral residential schools, and from the best scholars among the oral failures. A skilled otologist should have special charge of all deaf schools.

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A CASE OF PATENT DUCTUS ARTERIOSUS.*

By JAMES E. H. SAWYER, M.A., M.D.Oxon., M.R.C.P.Lond.,
Physician to Out-Patients at the Children's Hospital and Casualty Physician at the General Hospital, Birmingham.

THE patient was a boy, aged 7 years, who was sent to me by Mr. Frank Barnes from the Orthopædic Hospital, Birmingham, where he was under treatment for genu valgum. The boy was very small for his age, but his appearance did not suggest that he suffered from congenital heart disease; his lips and cheeks had a healthy colour, and there was no clubbing of the fingers. The boy had always been delicate, but had not had any serious illness. At the age of eleven months he was examined by a medical man, who told the mother, according to her account, that "one of the valves of the heart was short." The patient had a little bronchitis at that time, but has rarely suffered from a cough since. At times he used to become very short of breath, and on these occasions his lips and cheeks had a bluish tinge. There were four other children in the family who were quite healthy.

On examination of the thorax the following was the condition found: The præcordia was not prominent, and the chest appeared symmetrical, which observation was confirmed by a cyrtometric tracing. The cardiac impulse was heaving and diffused over a considerable area, whilst the lowest and outermost point at which it could be felt was one inch external to the left mammary line in the fifth intercostal space. A marked thrill could be felt all over the præcordia, and was most conspicuous in the third intercostal space just to the left of the sternum. It could be felt as high as the second left intercostal space, as far to the left as the apex beat, and also for one inch to the right of the sternum in the third, fourth, and fifth spaces. The thrill commenced with the cardiac impulse, and was of very long duration, occupying about half the cardiac cycle. It did not seem to extend beyond the period of the ventricular systole into that of the diastole. The area of cardiac dulness extended above to the second left costal cartilage, and could be defined on the left by a line drawn from the junction of this cartilage with the sternum to the apex beat. There was dulness also to the right of the sternum for about one inch in the third, fourth, and fifth intercostal spaces. On auscultation over the heart a loud rough murmur could be heard, and its point of maximum intensity was the left border of the sternum at the level of the third interspace. The murmur commenced with the first sound and continued almost to the end of systole, when it suddenly stopped. The murmur was louder over the base of the heart than elsewhere, becoming fainter over the apex. It was conducted into the axilla, and could be heard over the chest posteriorly. Its point of maximum intensity behind was over the vertebral column at the level of the spines of the scapulæ. The murmur could be heard in the vessels of the neck. The second sound could not be heard in the pulmonary area, although it was present at the apex. Over the aortic area and also down the right side of the sternum there was a blowing diastolic murmur, which was quite distinct in character from the rough systolic one. There seemed to be no interval between the rough systolic and the blowing diastolic murmurs. The second aortic sound could not be heard.

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* Shown at the Pathological Section of the Birmingham Branch of the British Medical Association, on October the 30th, 1908.

The lungs appeared normal, and the liver was not enlarged.

The pulse-rate was 100 per minute, and its character supported the view that there was aortic regurgitation. Capillary pulsation was very easily obtained. The blood-count showed that there were 6,933,000 red cells per c.mm.

That the child was suffering from a congenital malformation of the heart could not be doubted. This was shown by the previous history of the patient and by the following points in the examination : (1) The systolic murmur was of greatest intensity at the base of the heart than elsewhere, and was not conducted in the recognised direction of murmurs due to acquired lesions ; (2) the increase in the cardiac dulness was chiefly in an upward direction, and to the right of the sternum ; (3) the presence of a thrill over such a large area and of such long duration ; (4) the large number of red cells in the blood.

The diagnosis was made that there was a patent ductus arteriosus and also aortic regurgitation. The aortic regurgitation was obvious, but whether it was due to some congenital malformation of the aortic valves or to an acquired lesion was not so clear. There was no history of the boy ever having had rheumatic fever.

It is doubtful whether a positive diagnosis of a patent ductus arteriosus can be made in this case, but all the physical signs point in this direction. The position of the maximum point of intensity of the systolic murmur might suggest that the condition was due to pulmonary stenosis, the commonest form of congenital heart disease, but the murmur not being conducted towards the left shoulder, and the small amount of cyanosis from which the patient had suffered, pointed in another direction. Dr. G. A. Gibson has said that a systolic murmur at the base of the heart, commencing just after the beginning of the first sound, and going on through the whole of systole into the diastole of the ventricles, is a pathognomonic sign of patency of the ductus arteriosus. In this case the murmur began with the first sound ; it was certainly very long in duration, about half the cardiac cycle, but whether it continued after the closure of the semilunar valves it was difficult to say, as there was no audible second sound at the base of the heart. The murmur may have overlapped the second sound, and its loudness prevented it from being heard. On account of the ever-changing alterations of the blood-pressure in the different chambers of the heart a murmur which is continued through one cardiac phase into the next cannot be of valvular origin. The length of the duration of the thrill also points in this direction.

When the ductus arteriosus is patent the blood flows from the aorta into the pulmonary artery on account of the blood-pressure being higher in the former than the latter. As there was also aortic regurgitation in this case the blood-pressure in the aorta would rapidly fall after its first increase, and so the blood-pressure in the two vessels would become more equal, and the flow of blood through the ductus arteriosus not continue as long during each cardiac cycle as it would have done if there had been no leakage at the aortic orifice. This may account for the shorter duration of the murmur, which was found in this patient, than what is usually recognised to be the case in this form of congenital malformation.

The ductus arteriosus is supposed to become closed at birth in the following manner : It is inserted into the aorta at an extremely acute angle, and along the upper margin of the aortic opening of the duct there is a crescentic fold, so that at birth, when the blood-pressure in the aorta rises higher than that in the pulmonary artery on account of the establishment of respiration, this fold acts as a valve and closes the opening.

There are probably many causes which may prevent the ductus arteriosus from becoming occluded, and in this case, if the original malformation was one of the aortic valves, it is just possible that the aortic regurgitation might have been the cause. The blood-pressure in the aorta and the pulmonary artery is much more equal at birth, when the right ventricle is almost as powerful as the left, so that if there be aortic regurgitation the blood-pressure in the aorta during one small period of the cardiac cycle would probably be lower than in the pulmonary artery. This being the case, the valve-like arrangement at the aortic end of the duct would be opened during each cardiac cycle. This would keep the duct patent, and might eventually stretch the orifice so that the valve could no longer act. In course of time the pressure in the aorta would become higher than that in the pulmonary artery, so that the blood-flow would only occur from the aorta into the pulmonary artery. In this way it seems possible for the aortic lesion to have been the cause of the patent ductus arteriosus.

NON-DEVELOPMENT OF THE LOWER EXTREMITIES IN TWINS.*

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The following cases of congenital weakness and pseudo-paralysis of the lower extremities accompanied by habitual cross-legged posture occurred in twin boys who were brought to my Out-patients' at the Royal Orthopædic and Spinal Hospital, Birmingham, in September, 1908. The children, who were 2½ years old, had assumed the tailor posture from the time that they could first sit up, and when brought to the Hospital it was so confirmed that even when lifted from the ground the legs were retained closely folded beneath the buttocks. In the case of one of the boys he could with difficulty be induced to straighten the legs, and was then able to support himself on them. The mode of locomotion adopted was entirely by the hands, which were used to drag the body and tucked-up lower extremities about the floor in a very extraordinary fashion. The exact position of the lower limbs was as follows: The thighs were flexed, abducted and rotated outwards so that the external aspect of the knees was in contact with the ground, a bursa being developed at this point. The legs were acutely flexed and crossed just above the ankles. On fully extending the limbs the patellæ were seen to be much to the outer side when the toes were pointing upwards. Neither in length nor girth were the limbs properly developed. They were extremely weak, but without any true paralysis. Atrophy from disuse would correctly describe the condition.

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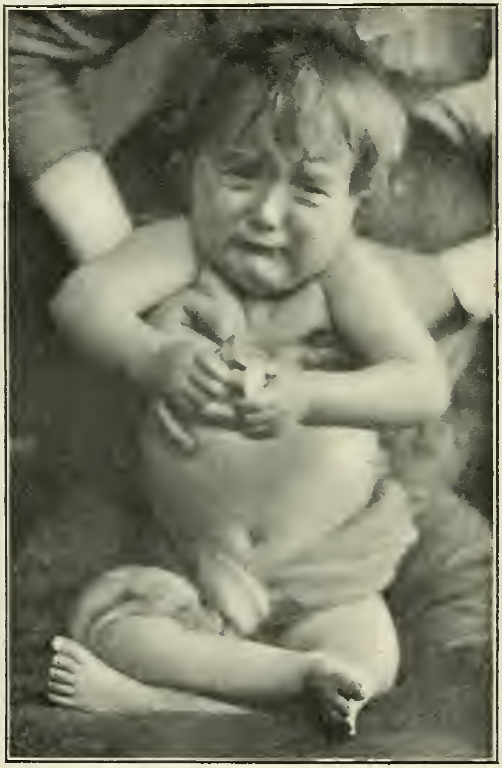
* Shown at the Birmingham Branch of the British Medical Association, on October the 8th, 1908.

Fig. 1.



I have seen three similar cases, two at the Children's Hospital, Birmingham, and one other at the Orthopædic Hospital. The prognosis is good. In the present cases very much benefit has been derived after six weeks' treatment by massage and galvanism, and the application to the feet of boots having the soles connected together with a light iron bar about one foot long. By this means free movement of all the joints is allowed, but the habitual approximation and folding in of the legs is thereby prevented. The children are encouraged and taught to stand and then to walk, and in the cases described they bid fair to walk in three months' time.

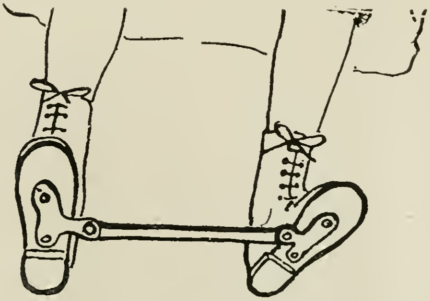


FIG. 2.—Light iron bar connecting the boots to prevent the habitual posture.

SUPPOSED MATERNAL IMPRESSION.

By CHARLES H. MELLAND, M.D.Lond., M.R.C.P.,
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THE belief that the fœtus may be influenced by impressions received by the mother during pregnancy is as old as history, and, like other superstitious ideas which are the residue of deeply-ingrained mental conditions dating back into an age of barbarism, it is displaced only with difficulty. Even in the present day the possibilities of coincidence are greatly under-rated, mainly because those cases are placed on record in which cause and effect seem satisfactorily established, whilst the far more numerous instances in which coincidence fails to produce any startling effects are silently passed over. If during her pregnancy a mother sees one of her children seriously injure three fingers of one hand, and then when her baby is born it is found that it is wanting in the same three fingers, the proof of the maternal impression seems complete, until we consider the numberless cases in which pregnant mothers have seen their children's hands hurt without any such effect being produced, or in which children have been born with defective fingers for which no maternal impression could be made responsible. Blondel, as far back as 1727, put it quite effectively when he stated that impressions must be constantly occurring which are not followed by any marks on the fœtus, and that deformities are met with in cases in which no appropriate impression has been alleged; and Zacchia, a century earlier, in considering the origin of hairy moles and nævi, indicated the weak point in the doctrine of the maternal imagination when he stated that if its influence was as potent as it was thought to be there would be no infant without marks, and some children would be spotted all over like leopards. Then, too, defects in the evidence are often glaring. Nothing is more remarkable than the inability of even the most intelligent to give accurate accounts of occurrences, particularly if some mental bias predisposes them to see only one aspect. So strong yet is the popular belief—and it is, indeed, not limited to the laity, but affects to a certain extent the medical mind—that if a child is born with some defect the mother will cast her mind back over the whole period of her pregnancy to discover whether during the whole of that time any event has happened which, even remotely, could be associated with the defect, and if she is able to pick out any which appears to her to be apt, she will unconsciously trick it out with circumstantial corroborative detail which, in Gilbert's words, adds artistic verisimilitude to an otherwise bald and unconvincing narrative. Thus, in one of the cases mentioned by Ballantyne, to whom all who are interested in this question owe a great debt for his collection of recorded instances, a woman attributed a nævoid mark on a child's left breast to having been struck in exactly the same spot during her pregnancy by an apple thrown at her. The case seemed remarkable and above suspicion, but on a second inquiry being made from her she substituted the right side for the left as the site of the blow, and thus very largely detracted from the closeness of the resemblance between cause and effect, upon which the striking character of the supposed impression mainly depended.

Bearing in mind, therefore, the misleading effect which the publication of only those cases which would appear to support the theory of maternal impression and the suppression of those which contradict it must have, I think it is only our duty to make public any cases coming under our notice which, however plausible the evidence they present may at first sight appear, break down on careful investigation.

It is only in such a way that the evidence for and against a theory which, to most scientific men appears untenable, can be fairly accumulated.

I will state briefly a case which I have recently come across, the only instance in a fairly long experience of children's diseases in which a mother has attributed a defect in a child to mental impression during pregnancy of a kind suggesting the defect supposed to have been produced, putting on one side, of course, those numerous ones in which defects have been vaguely attributed to various injuries, such as kicks and blows sustained during pregnancy. Fig. 1 is the left ear of a child, aged 5 weeks, with an accessory tragus. It was a small sessile body with nothing to distinguish it from many other cases of the like deformity that one has seen. The mother related, however, that during the last three months of her pregnancy she had frequently had brought to her notice a boy, aged 12 years, with a similar deformity, though in the right ear. This boy had carried her work to the warehouse regularly almost every day during that period, so that she saw him very frequently and took a good deal of notice of his ear, a friend having several times drawn her attention to it, and the peculiarity had struck her very much as she had never seen or heard of such a malformation before. She was able to produce this boy, Alfred T—, for my inspection, and Fig. 2 is a drawing of his right ear. There is present a very similar condition to that in the child; the accessory tragus is evident, only in this case instead of being sessile it is about half an inch in length, the peduncle being slightly narrower than the summit. There was, however, in spite of this slight difference, a very strong resemblance between the

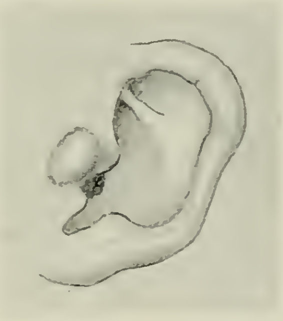

Fig. 1.—Left ear.

two, as the two pictures show, and there appeared very sufficient cause for the mother attributing the abnormality in her child to the impression which the boy had made upon her. Up to this point the story is consistent and plausible; even the fact that it was the left ear in her own child that was affected whilst it was Alfred T—'s right ear that was unusual cannot be said to have much weight, since, as she and the boy faced each other, it would be on her own left-hand side, and so might easily be supposed to impress itself on the corresponding ear of her child. But the fatal flaw comes in when we consider the period of pregnancy at which the impression occurred, as has been the case in so many other otherwise most plausible instances. The mother had only employed the boy during the last three months of her pregnancy, and had never knowingly seen him, certainly had never noticed the abnormality of his ear, before that. He was, by the way, as the question has been asked me more than once, no relation. On turning to a chronological account of the development of the fœtus in 'Cunningham's Anatomy,' I find it stated that the external ear acquires its adult form at the sixth week. At this period, therefore, the development of the external ear is complete; any abnormality in development, such as dichotomy of the tubercle of the tragus, must declare itself before this date, and cannot possibly originate in a mental impression occurring at least four and a half

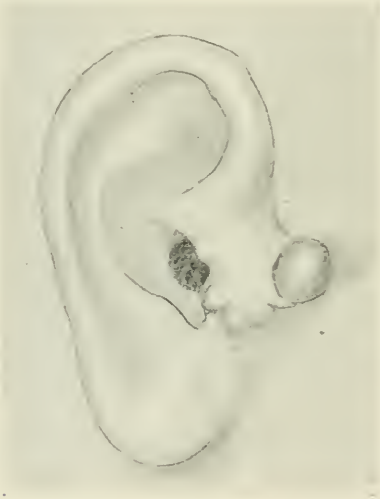

Fig. 2.—Right ear.

months later. The whole case therefore collapses like a house of cards.

The conclusion that one is forced to come to in this case is only in accordance with the views of all those who have recently interested themselves in congenitally abnormal infants—those to whom we may apply the term "teratologists." They have, almost without exception, concurred in totally condemning the theory which admits of the possibility of maternal impression. The intelligent lay and medical mind generally has come to doubt whether incautious remarks made about the devil by the mother during her pregancy really could be the cause of the birth of a hairy and otherwise deformed infant, or whether the position of Venus or of the moon at the moment of conception can have any potent effect in determining whether the infant will be normal or deformed. So the teratologists, while prepared to admit the modern doctrine that the mental and physical condition of the mother has a powerful effect on the general nutrition of the fœtus, wholly and completely refuse to give credence to the classical doctrine that a definite impression upon a woman's mind often, or ever, causes a defect in the fœtus closely resembling the thing producing the impression.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, October the 23rd, 1908.

Dr. George Carpenter, *President of the Section and Vice-President of the Society, in the Chair.*

The Minutes of the concluding business meeting of The Society for the Study of Disease in Children were read and confirmed.

The Chairman (Dr. George Carpenter) announced that a dinner would be held by the Section on Thursday, November the 5th, at 7.30 p.m., at the Café Royal. That had been decided upon as it was thought it would be a fitting conclusion of the labours of The Society for the Study of Disease in Children, which had now become merged in the Royal Society of Medicine. It was hoped that not only would all old members of the Society take part in the function, but also those intending to join the Section for the Study of Disease in Children in the Royal Society of Medicine. It was hoped that it would constitute a happy reunion, and that the new Section would start pleasantly and well. He asked those who intended to participate to give their names to Mr. Hugh Lett, the senior Secretary. As Dr. Spriggs had already announced when reading the Minutes of the concluding meeting of The Society for the Study of Disease in Children, volume viii of the 'Reports' was presented, and he had brought the work for their inspection. It would be in the hands of members of the Section in a week or ten days, together with volume ix, which was an index for the whole of the volumes. These volumes were the legacy of The Society for the Study of Disease in Children. The present volume of 'Reports' was about half as large again as the last volume, and contained 500 odd pages of scientific matter and nearly 100 pages of ordinary matter. At the concluding meeting of The Society for the Study of Disease in Children he mentioned the work which the Society had done during the last eight years. It might interest the present meeting to know the scientific work that had been done by the late Society. The eight volumes which they had published contained 384 pages of ordinary matter, 2760 pages recording the scientific work of the Society, together with 209 illustrations in the text, 39 plates, and 12 coloured plates. The smaller volume, No. 9, contained 104 pages devoted to a general index, and that rendered the work complete. The cost of printing and production amounted to about £1400. He thought that the members could review with pride and with pleasure their past record of work done, and the success attendant upon their efforts of permanently establishing the study of diseases of children as a special branch of medical practice, and placing it in this country on a footing of equality with other recognised special departments. He hoped and trusted that the Section for the Study of Disease in Children of the Royal Society of Medicine would excel the now historic efforts of its progenitor.

A Case of Toxæmia apparently caused by Ascaris lumbricoides.—Dr. F. W. Higgs read the following notes of the case: A girl, aged 5 years, was seized with acute pain in the abdomen and vomiting on the day previous to admission. The vomiting continued, and was said to have been fæculent. Some slime was passed by the bowel but no blood.

On admission the child was drowsy and very collapsed, with sunken eyes, cold extremities, a running pulse of 150, and a temperature of 100° F. The tongue was furred and dry. The thoracic viscera were normal. The abdomen was extremely retracted. The legs were held somewhat rigid, but Kernig's sign was absent. The fundi oculorum were normal. On the next day considerable improvement had taken place, and the improvement continued for two days, though the patient was still inclined to be drowsy. On August the 8th *a plum-stone* was passed *per rectum*. In the evening the temperature rose to 100·2° F., and the pulse from 96 to 104. The child became more and more drowsy, and lay for four or five days on her side in an attitude of general flexion and in a state of semi-coma. She exhibited irritability on being moved. The legs were somewhat rigid and Kernig's sign was then well marked. Tuberculous meningitis was diagnosed. On August the 15th the drowsiness had become less. The next day she vomited and complained of abdominal pain, and on August the 17th she vomited a round worm. From this time onwards she gradually improved and had no further symptoms, and was discharged from hospital on September the 9th quite well.

The reader of the paper admitted that in the great majority of cases the ascaris produces no definite symptoms, but thought that in this case it was extremely probable that all the symptoms were due to the presence in the body of a poison produced by the worm, which directly caused acute irritation of the intestine, and by its absorption also caused collapse, and, later on, the nervous phenomena.

The Chairman (Dr. George Carpenter) said the case seemed to confirm the clinical experiences and observations of other observers. Although he had seen a large number of cases of round worms, he had never noticed such symptoms as Dr. Higgs described, though he had read of them in literature. He invited expressions of opinion.

Dr. E. I. Spriggs considered that the importance of the case lay in the fact that the symptoms subsided after the worm had been vomited. He saw the case and knew that that was so. He had also seen another case at the Victoria Hospital, in which there was a temperature of 103·6° F. and persistent vomiting, and when two round worms had been brought up the condition subsided.

Dr. Charles W. Chapman said it would be a great help to get information which would assist the diagnosis of round worm. The diagnosis was generally made when the worm came up. Were there no characteristic signs which would put one on the track?

Dr. George Pernet said he thought the presence of eosinophilia might be useful in arriving at a diagnosis, because it had been shown that in ascaris trouble the number of eosinophiles was largely increased.

Dr. Porter Parkinson said that several years ago he had a case resembling the present one. He could not remember all the details, but the patient was sent into the hospital with the diagnosis of meningitis. He remembered that there was some retraction of the head, with stiffness of the muscles at the back of the neck, a fugitive squint, with some temperature, vomiting, and extreme drowsiness amounting almost to semi-coma. The symptoms disappeared after two round worms had been brought up. He thought that in a case of that sort at the present time lumbar puncture would give useful information, because by it one could exclude meningitis.

Dr. Edmund Cautley mentioned that meningitic symptoms occurred in relation with other kinds of worms. Some years ago he saw a case of supposed incipient tuberculous meningitis in a child, aged 2 years, in which no definite evidence of meningitis was found, although there was head retraction, some fever, and vomiting. Inquiry into the family history showed that another child had passed a round worm, and he then suggested that the case in point had a similar condition. The child was treated on that idea, and he subsequently heard from the doctor that the child passed a *tape worm*. Therefore meningitic symptoms in such cases need not be ascribed to toxæmia, it might be that they were reflex. Certainly there was great difficulty in diagnosing worm until it was seen or its ova were found. Eosinophilia might be present, but as it occurred also in other conditions it was not of much diagnostic importance.

Dr. Paramore said that, considering the frequency of round worm, especially among the poor in country districts, it was surprising that toxæmia did not occur more often. The present case seemed to be quite proved, but there might be some factor connected with the production of the high temperature which caused the death of the round worm, and the relationship was *post hoc* and not *propter hoc*. Considering the frequency with which children in country districts pulled up and ate turnips and swedes it was not surprising that worms were frequent. He had looked upon the round worm as a very innocent parasite, and the toxæmia resulting from it he had regarded with suspicion. The death of the round worm in the body seemed to reveal a toxic condition in the patient.

Dr. F. J. Poynton asked whether anything more could be said about the natural history of the plum-stone, which was passed.

Dr. R. H. Miller asked whether there was any acetonæmia, as possibly the symptoms might be due to acetonæmic intoxication; that condition did occur during intestinal upset, such as when a worm was present.

Dr. F. W. Higgs, in reply, said he should have mentioned that the case was admitted under Dr. Spriggs. No blood-count was done. He first saw the case when the drowsiness had become very marked. He made a careful examination, but although there was no positive evidence, he thought the case was one of meningitis. But when the symptoms began to pass off he thought otherwise, and he predicted that the next event would be the passage of a worm, and on the next day the child did vomit one. It was largely a guess, but he thought his mind had been guided in that direction by something he had read. He thought the case was as definite as one could well be. It occurred to him that round worm only produced toxic symptoms when it was in the upper part of the intestine, such as when the worm was vomited. When it was lower in the bowel he believed those symptoms were not produced. He did not see the plum-stone, but it was suggested that that caused the abdominal symptom. After its passage there was still abdominal pain, and the drowsiness persisted. There was no reason to suspect acetonæmia.

A Specimen of Cleido-cranial Dysostosis was exhibited by Dr. Poynton and Dr. R. H. Miller. The child died of marasmus when aged 3 months. It was breast fed, but never did well. The condition of the skull was noticed at birth. At six weeks the child was said to have had snuffles and a rash; anti-syphilitic drugs were given, but without improvement to the condition of the bones. There was no post-mortem evidence of syphilis. (1) The skull-cap showed great deficiency in the development of the bones. (2) The rudimentery left clavicle (sternal part) was attached to the first rib, and by a fibrous band to the acromion process. (The right clavicle was shown separately in the same specimen.)

The Chairman (Dr. George Carpenter) said that cases of the kind had been reported to the Children's Society, but the present was the first pathological specimen of the condition which had been shown. Some years ago he had published in the 'Lancet' a number of cases of defective clavicles which ran through several members of a family, six or seven of them showing all kinds of clavicle deformities. In those days no attention was paid to cranial changes, but it was his custom to examine heads as a matter of routine, but he had not detected abnormalities in the cases he had seen.

Dr. E. I. Spriggs asked whether any of the parents or ancestors of the child had any weakness in the shoulder girdle.

Dr. Edmund Cautley said he would like to hear about the causation of the disease. There seemed to be no evidence that it was syphilitic. In some respects it was analogous to achondroplasia, but differed from it in affecting the membrane bone. He asked whether the clavicles were cartilaginous or membranous in origin, or partly one and partly the other. Some of the cases showed complete atrophy of the whole bone, but in others only part of the bone was atrophied. Sometimes the outer half of the clavicle was present, sometimes the inner half. He remembered a case in which both halves were present but were united in the centre by a joint.

Dr. R. H. Miller said he understood that in the specimen the rudimentary clavicle was attached to the vertebræ, not to the sternum. He thought it likely that it was not a clavicle; it might possibly be the coracoid, which was represented by a portion of the coraco-acromeal ligament. He did not make out that it was attached to the acromion, but more to the region of the coracoid process.

Dr. F. J. Poynton, in reply, said the mother was not suffering from the same disease. He feared his anatomical knowledge would not enable him to clear up the question as to the origin of the clavicles. He believed the right clavicle was usually more affected than the left, as Dr. Still had pointed out. Another interesting point was the great slowness with which the fontanelle closed in some of those cases; a case was on record in which, in a man, aged 40 years, the fontanelle remained widely open. Dr. Spriggs had shown a case in which the skull was not affected. He thought the cause of the disease was unknown. There were some changes in some bones which were not membrane bones, such as in the phalanges. He treated it with mercury because members would have seen cases of defective ossification in syphilis which were improved by mercury. But he was not aware of a case of almost complete absence of clavicles with deficient cranial ossification due to congenital syphilis, a point about which he would be interested to have further information.

A Case of Congenital Morbus Cordis without Cardiac Murmur was shown by Dr. Porter Parkinson. The girl was admitted into hospital for slight chorea. She displayed well-marked cyanosis of the face and extremities and clubbing of the fingers and toes, together with general distension of all the superficial veins, especially marked on the temples and over the chest and abdomen. The apex beat was in the fourth intercostal space just internal to the nipple. The right limit of the deep cardiac dulness extended a finger's breadth to the right of the sternum. The heart-sounds were not regular; the first was somewhat short at the apex and the second intensified at the pulmonary cartilage. No murmur was heard at any time. The blood-count showed red blood-corpuscles 6,000,000, white 12,000, hæmoglobin 100 per cent.

A Case of Congenital Morbus Cordis in a Girl, aged 5 years, was exhibited by Dr. F. W. Higgs. She suffered from an attack of cyanosis when she was three days old. The second attack occurred at the age of one year and eight months, when she became unconscious, and had epileptiform convulsions. Loud rumbling presystolic and systolic murmurs were then heard ever the præcordium, loudest at the base. A week later the systolic murmur was not audible. Since then she had similar "heart attacks" at irregular intervals. Between the attacks she was apparently quite well and was not short of breath. The signs recently were as follows: apex beat ½ in. outside nipple line; impulse palpable in fifth and sixth spaces, more diffuse and forcible than normal; increased dulness to the left, no dulness to right of sternum; no epigastric pulsation; marked systolic thrill in third left space; systolic and diastolic murmurs audible at the base and conducted down the sternum and towards the apex. The second sound in the pulmonary area was much accentuated and continued into the diastolic murmur. The diastolic murmur Dr. Higgs thought to be produced at the aortic valve, and the systolic murmur either at the aortic valve or at a supposed patency in the septum (probably the latter), as it was conducted to the apex and was heard in the back, this, in his opinion, being much against a pulmonary origin. The accentuated second sound was, he thought, from its distribution, aortic. The thrill might be pulmonary in origin, but he thought it more likely to be produced by blood passing through a patent septum ventriculorum.

A Case of Congenital Morbus Cordis in a Boy, aged 6 years, was shown by Dr. C. W. Chapman. A month before the exhibitor saw him the boy had been passed as sound by the chief medical officer of a benefit society. There had been no illness of any kind, he had never been cyanosed, nor had a single cardiac symptom. He ran up and down the five flights of stairs leading to his flat without the least discomfort, and he frequently wrestled with his elder brother. The apex beat was in the fifth space half an inch internal to the nipple line; the heart's action was quiet. The cardiac dulness was normal on the right side, but a little increased on the left. A very loud blowing systolic murmur was heard over the whole cardiac area, its greatest intensity being heard at the sternal margin of the third left space. The murmur was lost at the anterior axillary line and was not heard at the left scapular angle; a soft murmur was, however, audible above the left scapular spine. The other organs were healthy. Dr. Chapman thought the case to be one of patent interventricular septum.

A Case of Situs Inversus was shown by Dr. E. Cautley. The patient was a girl, aged 5 years. Examination and X-ray photographs showed that the heart and liver were transposed. There was no congenital heart lesion or other malformation. The mother was in an asylum. By a previous marriage she had three children, of whom one died in infancy. The present child is the only one by the second husband, and was preceded by three miscarriages.

The Chairman (Dr. George Carpenter) said he had not had an opportunity of examining either Dr. Chapman's or Dr. Higgs' case, but he had seen Dr. Parkinson's patient at the hospital. It was very cyanosed, and the interesting point about the child was that there was no bruit. He had seen cases of marked morbus cœruleus without a bruit, and he had seen such cases where bruits had appeared and subsequently disappeared. He did not gather from Dr. Parkinson that the pulse was irregular. Some years ago he, Dr. Carpenter, had under his care a case of extreme interest—a gentleman aged 34 years. When first seen he was very blue, and the history was that he was considered a weak boy, and so was not allowed to play games. Subsequently he was able to take walks for many miles and to climb hills in Scotland, but hill-climbing was apt to make him short of breath. But the condition of blueness did not appear until he was twenty-seven years of age, and then a Bristol doctor pronounced that he had congenital heart disease. He came for advice, not because of the blueness, but because for some seven years he had experienced attacks of profuse hæmoptysis, and he had seen many doctors, who had made a variety of diagnoses; some said the hæmorrhage was from the lungs, and others that it was from the throat. During a period extending over three days he could testify that the patient lost a basin-full of blood. His lungs and throat appeared normal, but a post-nasal examination revealed a large quantity of adenoids, and he believed the bleeding arose from them. He sent the patient to a well-known nose and throat specialist, and an hour afterwards he, Dr. Carpenter, was asked whether the patient would stand an anæsthetic, because the specialist proposed to remove his turbinate bones. He, Dr. Carpenter, did not feel at all anxious to incur the responsibility of advising any anæsthetic, and they were not removed. The patient recently died suddenly on a racecourse, aged about forty. He had a not very obtrusive systolic whistling murmur midway between the apex beat and the left sternal margin, and it was best conducted downwards and to the right. The murmur was not always present. The apex beat was a quarter of an inch outside the nipple line in the fifth interspace; there was a slight exaggeration of the impulse, but not much; and his pulse dropped a beat every now and again and was irregular in force. There were first and second natural valvular sounds audible over both sides of the heart. The fingers appeared to be a trifle clubbed. There were certain changes in the fundus oculi which he would not now relate, and he had sent him to Mr. Sydney Stephenson, who would no doubt remark upon the fundal appearances in this patient when speaking of ocular changes in morbus cœruleus later on. It was interesting to record that the patient, although so blue, had lived so long a time, and such extensive hæmorrhages as occurred in this case were, in his experience, phenomenal.

Mr. SYDNEY STEPHENSON said the fact that many cases of congenital heart lesion were associated with eye changes did not seem to be as widely known as it deserved to be. He remembered the patient referred to by Dr. George Carpenter, who presented a typical picture of cyanosis retinæ; the retinal veins were dilated to three or four times the ordinary width and were filled with dark-coloured blood. The retinal arteries were also affected and showed some changes, and the optic discs were hazy, like the sun seen through a fog, owing, he presumed, to dilatation of the retinal vessels. Somewhat similar changes were present in Dr. Porter Parkinson's case, but the changes were not so marked as in the other case. The mere existence of those changes afforded reason for believing that cyanosis was due to a congenital affection of the heart. It might be asked whether those retinal changes amounted to much. They did not, but they had a practical bearing, and he did not forget Dr. George Carpenter's monograph on "Congenital Malformation of the Heart," in which he mentioned changes in the fundus oculi in connection with congenital diseases in the heart in childhood, and recorded a case where the discovery of cyanosis retinæ led to the discovery of the condition. The patient was admitted under Dr. George Carpenter in a comatose condition at the Evelina Hospital, and there were no obvious heart lesions, although he suspected congenital morbus cordis. The fundus oculi was examined and the changes characteristic of cyanosis retinæ were found, and the diagnosis was made on that account. The record states that the next morning the child was well and playing with its toys. He, Mr. Stephenson, would say one might distinguish between two kinds of retinal change, those in which the stress fell on retinal veins, and those in which both retinal veins and retinal arteries were affected. And he thought it possible that where veins and arteries were both involved one might presuppose a real mixing of arterial and venous blood, such as might come about through an imperfect or patent septum ventriculorum or patent foramen ovale, whereas if that sign were absent it pointed in the direction of the heart lesion being of another nature.

Dr. DAN MCKENZIE said there was one point in the case related by the President, which, taken with Mr. Sydney Stephenson's remarks, was of peculiar interest to those who concerned themselves with rhinology and throat work, *i. e.* the discovery in the adult patient of a large mass of what seemed like adenoids in the naso-pharynx, coupled with the discovery of engorged turbinates. The explanation he thought of those veins was that there was engorgement affecting the submucous structures in the nose and naso-pharynx similar to that which had been described by Mr. Stephenson in the eye. Therefore, he thought there was a very plain warning that cases of that description, whether in childhood or the adult, ought not to be submitted to operation without serious consideration beforehand as to whether the obvious risk of hæmorrhage might be too great.

Dr. Charles W. Chapman asked whether the water was examined in Dr. Parkinson's case and whether there was albuminuria because of the high pressure.

Dr. E. I. Spriggs asked whether anyone could give help as to diagnosis and treatment in those cases, not uncommon, where the legs and arms were blue, and in cold weather the child was blue generally, but no heart lesion could be found. He had notes of three cases in which there was persistent blueness in the arms and legs, but in which the heart was enlarged and there was no local evidence of heart disease. He thought there was every gradation between those and cases of morbus cœruleus, and he wondered whether there could be cases of polycythæmia independent of heart disease. There was no enlargement of spleen.

Dr. F. J. Poynton suggested, in Dr. Higgs' case, the alternative diagnosis of patent ductus arteriosus with possibly slight coarctation of the aorta, the latter causing some enlargement of the left ventricle and a loud humming murmur due to the patent ductus. He did not think it was an aortic murmur, but that was a matter of opinion. Some cretins could get so cyanotic that they might be mistaken for morbus cœruleus. He had seen two children, one with heart disease and one a cretin, and one could not tell which was which. But with the administration of thyroid the cretin lost all his blueness and got natural. He thought small doses of thyroid were sometimes worth trying in some of the cases where the circulation was very poor.

Dr. Fawcett thought the signs in Dr. Higgs' child were much more like those of patent ductus arteriosus with some coarctation. The vessels in the neck were seen to be strongly pulsating, suggesting some slight coarctation of the aorta, and the murmur was also characteristic of the condition. The pathological condition which would produce it in adults was aneurysm of the aorta communicating with the pulmonary artery.

Dr. Leonard Guthrie said he also thought Dr. Higgs' case one of patent ductus arteriosus. He would rely on the characters of the bruit, it being heard throughout the whole cardiac cycle. He thought it a matter of diagnostic importance in those cases, and the bruit in them was unlike that produced in other forms of congenital heart lesion.

Dr. Charles W. Chapman asked that in future heart cases might be put in a separate room for examination, as, with the conversation going on, it was almost impossible to auscultate them properly.

The Chairman (Dr. George Carpenter) said with regard to the changes in the fundus oculi which Mr. Stephenson had mentioned, the first observation he (Dr. George Carpenter) made on the condition occurred many years ago in a child aged 5½ years, who came into hospital with a systolic bruit of greatest intensity over the pulmonary area. He was markedly blue, but that blueness did not appear until he was two years old. On examining the fundus oculi he found that both the arteries and veins were very large and very tortuous, the most marked he had ever seen. The optic discs were very hazy, and the red reflex ran up to the physiological pit. That child subsequently died, and not only was there enlargement and tortuosity of the vessels in the eye, but there was enlargement, thickening, a tendency to fibrillation, and tortuosity of the capillaries all over every part of the body he microscopically examined, viz. brain, kidneys, lungs, liver, and heart. Sections of the skin, however, displayed no alteration in the capillaries. In regard to the heart he found both the ventricles hypertrophied and dilated. The aorta arose from both ventricles and passed over the right bronchus; there was a perforate septum ventriculorum; the conus arteriosus of the pulmonary artery was completely occluded; the pulmonary artery was quite rudimentary, of the size of a crow-quill, and it had two equal well-formed small pulmonary valves. Such cases were very interesting from the ophthalmoscopic point of view, and he thought every case of morbus cœruleus should have the fundus oculi examined and the results recorded. That offered an interesting and novel field for observation. He had seen the fundus oculi of Dr. Porter Parkinson's case and had observed the changes described by Mr. Stephenson. In regard to Dr. Dan McKenzie's remarks, he thought that the observations he (Dr. George Carpenter) had just related also lent confirmation to his suggestions.

Dr. Parkes Weber thought that in Dr. Parkinson's case the lesion was a patency of the interventricular septum, but in cases of that kind, whenever they had been examined post mortem, it had been mostly found to be associated with other lesions, such as those which had been described by Dr. Carpenter, and in some of those cases there had been no abnormal murmur heard during life. In a case he showed recently before the Clinical Section, in a girl, aged 16 years, who had polycythæmia and cyanosis, the former was evidently due to congenital heart disease. There was no marked hypertrophy of the heart, but that organ was too globular, suggesting that the two sides of the heart were about equally developed. The murmur was, in some postures of the body, completely absent. In Dr. Higgs' case he agreed that the lesion which produced the murmur on the left side of the base was a patent ductus arteriosus. The murmur spread through the whole cardiac cycle. But he thought the degree of malformation in that case was much less than in Dr. Parkinson's patient, although in the latter there was no murmur at all. In Dr. Chapman's case he suggested that there was a slight degree of pulmonary stenosis, and nothing else.

Dr. Porter Parkinson, in reply, said the urine was tested, and did not contain albumin. He had been pleased to hear Mr. Stephenson's description of the fundus of the eye, as he did not know that he had examined it. The venous distension was very evident all over the body, viz. in the neck, chest, forehead and abdomen, and many of the veins were tortuous. Patent interventricular septum might exist without a murmur; he had seen it himself. He remembered a girl, aged 19 years, who died with ulcerative endocarditis. Previous to that there had been no cardiac disease, and post mortem it was found that besides the endocarditis there was a patent interventricular septum. Infection had been carried from the left ventricle to the right by the current of blood going from the left to the right ventricle during systole, and there was no murmur. But he thought that in his present case there must be something more than that, because that anomaly was not generally associated with cyanosis, or, if so, the cyanosis was only very slight. He suggested there was some pulmonary stenosis, which was supported by the fact that there was some definite enlargement of the right ventricle.

Dr. F. W. Higgs said he agreed with Dr. Chapman that there was a patent septum ventriculorum in his (Dr. Chapman's) case. In regard to his own case, he thought the pulsating vessels in the neck were of as much importance as the other condition. Coarctation of the aorta was very rare indeed. The cases he had seen post mortem in which, during life, the bruit was heard all over the chest, back as well as front, had occurred with a patent septum ventriculorum. In one such case there was aortic stenosis. As to a murmur produced by a patent ductus arteriosus, he had seen several cases of that defect in the post-mortem room which had caused no murmur during life. He thought the diastolic murmur in his own case was aortic.

A Case of Enlarged Spleen was exhibited by Dr. J. Walter Carr. There was nothing in the history or in the child's condition to suggest either syphilis or malaria, but she was treated for rickets when a few months old. She was 11 years old, and had probably had an enlarged spleen for several years, as the mother has noticed the child's abdomen increasing in size for the last six years. The spleen now reached to about half-way between the costal margin and the umbilicus; it was hard and not tender. The liver was not appreciably enlarged. There was no enlargement of the external lymphatic glands, and the only indication of any enlargement of the internal glands was slight dilatation of the cutaneous veins over the front of the thorax. There was a slight degree of anæmia, but no leucocytosis. The red blood-corpuscles numbered 3,000,000 per c.mm., the white 7000 per c.mm., and the hæmoglobin 70 per cent. There was an increase of the eosinophiles to 6·5 per cent. The child's general condition was quite satisfactory. The exhibitor considered that the case raised the question as to whether the rickets in early childhood was accompanied by an enlargement of the spleen (pseudo-leukæmia infantum) which had persisted or even increased, whilst all the other symptoms of the condition, except slight anæmia, had disappeared.

The Chairman (Dr. George Carpenter) pointed out that the hour was, unfortunately, too far advanced to discuss the many interesting problems raised by the exhibitor, but the Section might well consider the question of splenomegaly at one of its special meetings, when full justice could be done to the subject.

Cases of Post-basic Meningitis Treated by Intra-spinal Injections of Ruppel's Serum. A paper was read on this subject by Dr. F. J. Poynton and Mr. W. M. Jeffreys.

Case 1.—The interest in this case lay in the rapid recovery after the intra-spinal injection of Ruppel's serum. A. H. M—, a breast-fed infant, aged 8 months, had a fall on his head on August the 12th, from which the illness was dated. The symptoms were a staring look in the eyes, vomiting, wasting, and pain in the neck, with retraction of the head and general irritability. There was high fever. Later, Kernig's sign was present and the head retraction became marked. On September the 2nd lumbar puncture gave the following result: a turbid fluid showing numerous polymorphonuclear leucocytes and an intra-cellular non-Gram-staining diplococcus. On September the 6th 2·5 grm. of Ruppel's serum were injected subcutaneously, with no improvement, so on September the 7th 1·5 grm. were injected intra-spinally, the cerebro-spinal fluid being still turbid. The next day the temperature fell to normal and recovery commenced to take place.

CASE 2 occurred in April, 1907, with a similar history and symptoms; head retraction, squint, Kernig's sign, etc., were present. Lumbar puncture gave a turbid fluid and a non-Gram-staining intra-cellular diplococcus; 3½ drm. of a fluid preparation of Ruppel's serum were injected subcutaneously; five days later the child was playing with its toys, and was discharged cured on May the 12th.

CASE 3 was admitted into hospital on July the 21st, 1908, after two days' illness with fretfulness, drowsiness, and convulsions. Fourteen days later the fever persisted, his eyes were staring and apparently sightless, and there was some rigidity of the limbs. Kernig's sign was present and the head was retracted. Lumbar puncture was positive. The two following days subcutaneous injections of Ruppel's serum were administered, and the child appeared to improve, but in spite of a lower temperature it gradually developed irregular breathing and coma. Death occurred five days after the first injection.

Mr. SYDNEY STEPHENSON asked what kind of serum was used.

Dr. TORRENS said he had seen six cases treated with serum in that manner, but they were all fatal. He asked where Dr. Poynton procured his serum. In the cases he referred to it was procured from a firm of repute.

Dr. E. I. SPRIGGS said he had treated two cases with Ruppel's serum, but in neither was it of any avail.

Dr. F. J. POYNTON, in reply, said it was a dried serum, which came out flaky. It was an anti-pneumococcal serum, made by Ruppel in Germany, and it had to be dissolved. He did not know whether there was any particular value in it, but knowing what we did of post-basal meningitis and having the bacteriological proof in each case of the disease, it seemed to point to the serum being a valuable one. He had been anxious to learn whether any other members had had the same good fortune. Other physicians had told him of beneficial results from it, the improvement coming on suddenly. He wondered whether Flexner's serum had given any good results; he had not tried it himself.

A Case of Prolonged Pyrexia of Uncertain Causation was exhibited by Dr. E. CAUTLEY. The child, aged 5 years, was admitted into hospital on July the 3rd, 1908, with a history of pain in the back and chest for two or three months, and loss of flesh. He was anæmic, ill-nourished, with a dirty tongue, and a small patch of broncho-pneumonia below the level of the right nipple and general bronchitis. The urine contained a trace of albumin. The bronchitis and pneumonia cleared up in a few days, and the albumin disappeared, yet the temperature kept up. On July the 20th there was a leucocytosis of 11,500 per c.mm., and no splenic enlargement. On August the 11th the patient's opsonic index at 97° F. was 0·94, and at 101° F. was 0·79. The tuberculin treatment was continued. On September the 19th there was a leucocytosis of 16,000, the differential count giving the percentages of polymorphs 60, small lymphocytes 39, large lymphocytes 0·5, basophiles 0·5. Since the beginning of August the case has been under Dr. Higgs, who has noted some impairment of resonance over the manubrium. The temperature chart shows a markedly hectic fever, which at first ranged between 96° F. and 105° F. in an irregular kind of way. As a rule the highest point was in the evening, but it was not infrequently so in the morning. There are greater remissions now, and the fever as a whole keeps at a lower level. The fever was thought to be the result of some mild type of infection.

The CHAIRMAN (Dr. GEORGE CARPENTER) said the case was interesting, and no doubt other members had seen similar cases, in which a diagnosis could not be arrived at. He would narrate one such personal experience. The patient was a young fellow, aged 26 years, who had become thin without obvious reason, who complained of muscular pains, and who had an oscillating temperature for some months. He made many and exhaustive examinations with negative results; the blood was carefully examined by several pathologists, X rays were turned on to the patient, several doctors saw him, but no diagnosis was ever made. He afterwards completely recovered. He subsequently went out to Africa and is there still, where he is engaged in mining engineering.

Dr. F. J. POYNTON said he thought there was a real lesion in the lung; there was much harsher breathing at the left apex than at the right, enough to explain the fever, and he thought it would prove to be tubercular.

Dr. F. W. HIGGS said that he had hunted all over the body and thought it must be tubercular, but as he could find no evidence he thought the mischief must be in the bronchial glands, an opinion he still held. In that condition there were sometimes no signs nor symptoms. He therefore had the opsonic index taken, with the result which had been narrated. He treated the case on the same lines as Dr. Latham had been treating tubercle, by giving tuberculin T.R. in 10 c.c. of saline solution before meals. The opsonic index and the reaction to tuberculin pointed to tubercle. The temperature went up three days afterwards, but that was followed by a period in which it went lower each day, and there was a definite increase in the weight, namely, sixteen, twelve, eight and eleven ounces on different days. A most obvious difference was also noticeable in the child, for it was much brighter and started to talk and play with other children. The improvement had not been so marked latterly, but one would expect any benefit to be most marked at first. If his diagnosis was correct, the treatment should be continued for a year or two. If it had been ordinary tubercle, one would have expected it to have become generalised before the present time.

Dr. EDMUND CAUTLEY, in reply, said Dr. Poynton's remarks did not prove that the left apex was diseased; the child had never had active signs at the apex of either lung, nor any cough to speak of, except for a little bronchitis when it came in. There was no sign of pressure of enlarged bronchial glands, no dulness over the manubrium sterni or behind. Even though there was improvement under tuberculin, he did not think the diagnosis of tubercle was logical.

A Case of Congenital Syphilis was exhibited by Mr. DUNCAN FITZWILLIAMS. The patient was a girl, aged 7 years, the eldest of seven, the three children next to her having died in infancy, the others being alive and well. Notes of her health in infancy were not available. Three months ago she complained of pain in her legs, which was worse at night and constant in character. On examination the child was seen to be very anæmic; small scars were noticed about the angles of the mouth; the bridge of the nose was sunken and broad; the teeth presented the characteristic cone-like shape with notched apices. In the right upper limb the humerus was diffusely thickened in its lower half. In the left upper limb the humerus was only slightly thickened towards its lower end, but the radius, and to a less extent the ulna, were thickened throughout the whole length of the shaft. In the lower limbs both femora seemed to be affected all the way up. The two tibiæ were broadened to about one and a half times their normal width, and the sharp anterior edge was replaced by a smooth rounded surface. The fibulæ were only slightly affected. The liver and spleen were both larger than normal. It was noteworthy that the flat and the short bones showed no changes, and the eyes had so far escaped.

Two Cases of Microcephalic Idiocy, with Changes in the Fundus Oculi, were shown by Dr. George Carpenter. The first case was that of a girl, aged $2\frac{1}{2}$ years, whose head was noticed to be peculiar when it was born. The head measured fifteen inches in circumference and was covered with a plentiful crop of bristly hair. The forehead was poorly developed and the occipital region flattened. Sutures closed; no bossing. Intra-parietal diameter large in comparison to the smallness of the circumference. Malar bones rather prominent. Lower jaw small and receding. Teeth excellent. The legs were stiff and kept flexed at the knees. Knee-jerks +, the plantar reflex extensor. The following movements were executed: a slow side-to-side movement of the head (attitude of listening), and flexion and extension of the rigid cervical spine on the upper dorsal vertebræ (nodding). There appeared to be some appreciation between light and darkness, but no recognition (mental) of objects brought into her vicinity. The eyes displayed a coarse lateral nystagmus, and in the central region of the left fundus oculi there was a large patch of choroidal atrophy. This may either be ascribed to a central coloboma or to a syphilitic choroiditis. Congenital abnormalities in the eye are, on the other hand, not uncommon in cases of pronounced hereditary syphilis. She was the second child, the first being five years old. There were no miscarriages. Her maternal grandmother died of consumption. She had never displayed any signs of intelligence. There was no personal evidence of syphilis or tubercle, but one of alcoholism, the father dying of "cancer" and was credited with being a "heavy drinker."

The second case, a girl, was aged 5 years, and the sixth child of the marriage. There was no history or personal evidence of syphilis, but there was one of alcoholism, the father, who works at a wine shop, being credited with the capacity of consuming "four tumblersful of port daily for years." The head measured fourteen inches; the forehead sloped backwards from the eyebrows and inwards from the ears. It displayed a prominent ridge along the coronal suture and the anterior fontanelle was closed. The arms and legs were rigid and the knee-jerks exaggerated. The thumbs were kept rigidly flexed in the palms, and the legs were usually crossed over one another. She did not appreciate light, and did not flinch when the fundus oculi was examined. There was a ring of dense pigment round the right optic disc and this was absent in the left.

Philadelphia Pediatric Society.

Stated Meeting, October the 13th, 1908, J. P. Crozer Griffith, M.D., President.

Arthritis Deformans in an Infant.—Dr. J. T. Rugh reported a case of arthritis deformans in an infant, born March the 25th, 1906. Birth was normal, the patient being the third child. The first one was well; the second was a miscarriage at six months, following a fall. Family history was negative as to tuberculosis or other transmittable conditions. The child was breast-fed; teething was normal; walking began at nine months. At six weeks she had pertussis; at sixteen months she was weaned and has never had any stomach trouble. Stiffness of the neck was first noticed in June, 1907; then the wrists became enlarged next, in January, 1908. In February, 1908, while standing by a chair, she fell to the floor and has not walked since. Now the phalanges of hands and feet, the ankles, knees, shoulders and spine are involved. Fingers are in slight flexion, as are the elbows. The child is much thinner than formerly, but her general health is fairly good. Development proceeded normally and there is marked absence of any ætiologic factors. The child was placed upon tincture of iodine and has shown considerable improvement.

Dr. Howard Childs Carpenter said that this was a most interesting case, showing all the symptoms of arthritis deformans and none of syphilis or tuberculosis. The symptoms were so typical that diagnosis was not difficult, even in so young an infant.

Dr. Rugh added that he had investigated the history of this case to discover any shock or fright, but could find none. He had previously seen a child of three years develop arthritis deformans after extreme fright.

Double Suppurative Parotitis complicating Typhoid Fever.—Dr. Howard Childs Carpenter presented a boy, aged 11 years, who developed parotitis on the left side on the seventeenth day of a severe typhoid, and twenty-four hours later the right side became involved. Both sides became greatly swollen, with extensive inflammation of the tissues surrounding the parotids. Both glands were incised and continued to discharge pus until the fifty-first day, when both wounds completely healed. He made an uninterrupted recovery.

Dr. Griffith asked whether anyone had ever seen such a case.

Dr. Alfred Hand, Jun., said that while all the text-books spoke of suppurative parotitis as a complication of typhoid fever, this was the first case he had seen. He wondered whether the infection had come through the blood or by migration from the mouth.

Dr. Crozer Griffith said that he had also read of suppurative parotitis complicating typhoid fever, but had never before seen a case.

Dr. H. C. Carpenter added that this boy had several other abscesses, so that the infection might have occurred through the blood, but the fact that both parotids were affected would point rather to infection through Steno's ducts. Surgeons hesitate to open the parotid, as sinuses commonly result, which heal slowly; in this case no such difficulty was experienced.

Œdema Neonatorum.—Dr. H. C. Carpenter reported this case. The infant was born with œdema of the thighs, scrotum, supra-pubic region, and the lower half of the abdominal wall. The urine was normal and the heart negative. It had a blood-count of 50 per cent. hæmoglobin, and 2,839,000 red corpuscles. It also had symptoms of hereditary syphilis.

Dr. Crozer Griffith considered this case most unusual. The question arose as to whether it might not be scleroma but the hardness and discoloration were absent and there was distinct pitting. Bright's disease was also considered. Dr. Griffith believed that nephritis can occur in infancy without albuminuria, but there was no inflammation of the kidneys in this case. The hereditary syphilis was the most probable explanation.

Dr. A. H. Davison did not believe that this case could have been scleroma, as both the induration and the discoloration were wanting.

Double Congenital Luxation of the Hips.—Dr. A. P. C. Ashurst, on behalf of Dr. G. G. Davis, presented a girl, aged 2½ years, with double congenital dislocation of the hips. She came under the care of Dr. Warren Walker in the dispensary of the Children's Hospital in February, 1908. Being admitted into the wards, in the service of Dr. J. P. Hutchinson, Dr. G. G. Davis was called in consultation, and on February the 28th, 1908, when the child was just two years of age, Dr. Davis successfully reduced both dislocations by his method of forward pressure on the trochanters, while the patient lay prone with the thighs flexed to 90° and abducted as far as possible. The patient's lower extremities were put up in plaster casts, in the so-called "frog position," and in spite of an attack of diphtheria, during which the child was in the Municipal Hospital, she did well; the cast was changed at suitable intervals, the position of the thighs being gradually altered to the normal, and the use of a cast was discontinued six weeks ago, about September the 1st, 1908. Since that time the patient had been walking about normally. When examined now the gait is seen to be natural for a child of less than three years; the marked lordosis present before the dislocations were reduced has disappeared, and the heads of the femurs can be felt in their normal position below Poupart's liagment. Skiagraphs made before reduction were shown, as well as one made on the day the patient was exhibited to the Society, showing the heads of the bones in the acetabulum.

Dr. Rugh thought this a remarkably good result considering the short time—not yet eight months—since operation. But the anatomy of the parts, as shown by the skiagraphs, was most favourable in this case.

Dr. E. B. Hodge said that this was one of the best results of operation for double luxation of the hips that he had ever seen.

Congenital Hypertrophic Stenosis of the Pylorus.—After detailing a complete review of the history, symptomatology, ætiology, morbid anatomy and treatment of congenital hypertrophic pylorus stenosis, Dr. W. N. Bradley reported the case of a child, aged 4 weeks, who had been breast-fed for three weeks. On the seventeenth day of life vomiting began and became continual. The bowels were constipated. The child was admitted into the Children's Hospital when thirty-one days old. Operation was performed one week later by Dr. E. B. Hodge, but the infant died the next day.

Dr. Hodge said that medical treatment had been tried for a few days after admission into the hospital. As there continued to be progressive loss of weight with vomiting, constipation, and visible peristalsis of the stomach, operation was undertaken. At no time was a mass palpable. At operation the enlargement of the pylorus was typical and marked. A Heincke-Mikulicz pyloroplasty was done. On account of the friability of the fibrous tissue the stitches repeatedly tore out, and considerable time was lost before the suturing was completed. Time of operation was forty minutes. Most of the operation was performed without anæsthesia. The child was in fair shape after operation, but died after twenty-four hours. In another case presenting as much thickening of the pylorus Dr. Hodge would do gastro-enterostomy, reserving pyloroplasty for cases with less thickening and hardening of the pylorus.

Dr. J. C. **Gittings** said that recently he had seen a case in which the diagnosis of hypertrophic stenosis of the pylorus seemed most probable, because of the fairly typical history and the occurrence of reverse peristalsis across the epigastrium. At autopsy two days later a greatly distended colon was found overlying the stomach while an anomalous right-sided sigmoid lay directly below it, passing from the splenic flexure transversely across the epigastrium to a point just below the hepatic flexure and then diagonally downward to the left side of the pelvis. It was the normal peristalsis in this high-placed, right-sided and distended sigmoid that had been seen above the umbilicus. The case will be reported in detail.

Dr. E. E. **Graham** said that, in the cases which should be called congenital, symptoms occurred soon after birth. Those cases ran an acute course with marked symptoms, with a good prognosis because they come to operation early. The diagnosis may be made without any tumour being found. He had seen an infant six weeks ago, with symptoms dating from birth. Operation was performed on the thirteenth day of life and the child lived for ten days after gastro-enterostomy. Dr. Graham has a surgeon to see such cases early whenever possible.

Dr. J. J. **Gilbride** had reported a case in a child, aged 7 weeks, in which a tumour was palpable. Operation was refused and the child died three days after being seen.

Dr. **Hand** commented on the rarity of such cases in Philadelphia, and he does not believe that they are overlooked. Cautley's series of specimens demonstrated in Toronto two years ago convinces him that the condition is congenital.

Sarcoma of the Kidney in an Infant.—Dr. C. C. **Rush**, by invitation, reported a case of tumour of the kidney in an Italian baby, aged 9 months, who entered the University Hospital with a mass on the right side of the abdomen. The urine showed albumin, hyaline, pale and dark granular, leucocytic and blood-casts. She was operated upon and died after operation. Examination of the tumour showed it to be sarcoma of the small round-celled variety.

Dr. **Crozer Griffith** said that he had seen a great number of tumours of the kidney in young children, and all that had been operated upon died, either right after operation or from recurrence.

Dr. **Bradley** said that he had seen two cases of sarcoma of the kidney in children, one of which at autopsy weighed twenty pounds. In this case only one kidney was present.

Abstracts from Current Literature.

Medicine.

Apparent recovery from tuberculous meningitis (*'Arch. de Méd. des Enf.,' February*, 1908, *p.* 130).—**F. Carles** relates the case of a girl, aged 3 years, with no history or evidence of hereditary syphilis, who was admitted to hospital in January, 1907, with all the signs of tuberculous meningitis. Lumbar puncture showed clear cerebro-spinal fluid with very marked lymphocytosis. A month later she developed measles, then whooping-cough and broncho-pneumonia. The meningeal symptoms, however, gradually became attenuated, and by April had almost completely disappeared. In April, and again in November, the cerebro-spinal fluid was found to be normal. Calmette's ophthalmo-reaction was performed in September and proved positive. In December, 1907, the child was apparently in excellent health. Carles thinks that the case was probably one of localised tuberculous meningitis with recovery, or, at least, a remission of long duration. J. D. Rolleston.

The treatment of the more serious sequelæ of faucial diphtheria (*'St. Bart.'s Hosp. Rep.,'* 1904, *p.* 41, *and* 1907, *p.* 93).—**G. C. Garratt** distinguishes between two classes of sequelæ—the early and the late. The term "paralysis" is applicable to the latter only, the former being due to toxic irritation of the bulbar nuclei. The treatment for the two conditions is correspondingly different. In the early stage the nerve centres should be quieted, not stimulated, and, therefore, strychnine and alcohol are harmful, whereas bromide and belladonna are indicated. For the early vomiting he recommends four-hourly rectal feeds with 20–30 minims of belladonna in each feed. Twice in the twenty-four hours 20 grains of potassium or sodium bromide should be added. Every twelve hours 10–12 ounces of hot water containing a little sodium bicarbonate should be given by an œsophageal tube one hour after the bromide. Five illustrative cases are recorded in which this treatment was most successful.

J. D. Rolleston.

Diphtheritic paralysis (*' Glasgow Med. Journ.,' January*, 1908, *p.* 53). —**A. B. Sloan** records the case of a boy, aged 5 years, admitted to hospital on the fifth day of disease with severe faucial and nasal diphtheria. Thirty-six thousand units of antitoxin were given on admission and 18,000 on each of the two following days. Palatal palsy developed on the eleventh day and cardiac involvement on the fourteenth. On the twenty-fourth day pharyngeal palsy began, and lasted till the fifty-fourth. From the fifteenth to the thirty-seventh day the child was fed by rectum only. After this, for a further period of seventeen days, nasal feeds were employed. Albumin was present in large amount, and was accompanied by general œdema. After three months' stay in hospital complete recovery took place. A table showing the incidence of paralysis in 116 cases of diphtheria conclusively proves that the frequency and severity of diphtheritic paralysis are greater after severe than after mild angina. J. D. Rolleston.

Medical observations on the juvenile delinquent (*'Pediatrics,'* 1908, *p.* 447).—**William G. Eynon** found from observations made at the New

York House of Refuge that the juvenile delinquent is mentally inferior to the average boy of the same age, but the actual number of feeble-minded is not more than 1 in 500. In most cases the mental inferiority is acquired, not congenital, and is due to lack of training and vicious habits of thought and action. Eynon found that physically the inmates of the New York House of Refuge compare very favourably with average boys of the same age. In Eynon's experience physical deformity and disease played no part in the causation of moral delinquency. Interesting remarks are made on sexual perversion, self-mutilation, and the periodicity of bad behaviour. Eynon is in favour of the sterilisation of habitual criminals, epileptics and degenerates, and of more stringency in the emigration laws, since 65 per cent. of the children are foreign born or of foreign parents. Plenty of work for mind and body should be provided, especially work as will be useful in later years. Outdoor play should be encouraged and over-indulgence in food, especially of the nitrogenous variety, should be avoided. Sermons and lectures on abstract mortality are almost useless. J. D. Rolleston.

Rheumatic affections in children (*'Pediatrics,'* 1908, *p.* 466).—**F. L. Wachenheim** in the course of forty-one months collected 113 cases of rheumatic disease out of a total of 8000 children. Among 5200 children between 0 and 3 years there were 4 rheumatic cases, among 1900 between 4 and 8 years 55 cases, and among 900 between 9 and 13 years 54 cases. Rheumatism was commoner in females. Very few of the cases were severe, and salicylate treatment was rapidly effective. Sixty per cent. of the cases had an undoubted cardiac lesion. The endocardium was chiefly affected during early childhood, and the joints were not involved to any extent until after the fourth or fifth year. Only one case of pericarditis occurred. Tonsillitis was a very frequent complication. The prognosis of valvular disease, especially of the mitral valve, is better than is stated in text-books. Compensation was easily established in young children, but was also easily upset. Below puberty exacerbations were always likely to occur. Endocarditis was treated by rest in bed and cold local applications. Digitalis was reserved for deficient compensation in chronic heart disease.
J. D. Rolleston.

Prevention of fœtal infection (*'Pediatrics,'* 1908, *p.* 431).—**J. C. Edgar** thinks that cleansing of the child's mouth on delivery of the head is often overlooked. It is especially indicated in cases of difficult labour or maternal gonorrhœa to prevent aspiration of the maternal secretions. Chemical antiseptics have no special value, but a mechanical removal of the foreign bodies should be carried out thoroughly and gently. After clinical experiments with silver nitrate, argyrol and protargol, Edgar at present employs a 25 per cent. solution of argyrol at the Manhattan Maternity and the Emergency Hospital. A drop is applied to each cornea after the lids have been cleansed from within outwards with gauze moistened in sterile water. Neglect of asepsis in cutting and dressing the umbilical cord may produce purulent thrombi of the intra-abdominal vessels, and is probably the cause of some obscure deaths in early infancy. Among 1600 infants treated in the hospital and tenement houses by the aseptic method there was not a single case of umbilical infection. J. D. Rolleston.

Diphtheria in the Metropolitan Asylums Board hospitals (*'M. A. B. Reports,'* 1907).—Up to and including the year 1905 diphtheria had been less prevalent in London since 1899, but since 1905 it has again increased (*cf.* British Journal of Children's Diseases, 1907, p. 361): 5774 cases of diphtheria were admitted during 1907. The mortality was 9·58—an increase over the previous year (8·8). The mortality at the various hospitals varied from 5·9 to 12·8 per cent: 5121 were treated with antitoxin. Of these 530 died—a mortality of 10·37 per cent. Of 494 not treated with antitoxin, 14 died. These were either moribund on admission or late cases with clean throats. Among 970 laryngeal cases there were 163 deaths—a mortality of 16·8 per cent. On 432 tracheotomy was performed, on 100 intubation, on 38 both operations, among which there were 129, 21, and 13 deaths respectively. The percentage error of diagnosis in cases admitted was 17·0. Among 1180 wrongly certified as diphtheria were 815 of tonsillitis, 73 of measles, 36 of Vincent's angina, 31 had no obvious disease, and 21 were not diagnosed. Of complications paralysis occurred in 14·4 per cent., albumin in 20·3 per cent., relapses in 1·18 per cent. Of sequelæ scarlet fever occurred in 5·15 per cent., and measles in 1·05 per cent. Serum rashes occurred in 25 per cent., joint pains in 3 per cent., and abscesses at the injection site in 0·49 per cent. J. D. Rolleston.

Disinfection after measles (*'Pediatrics,' vol.* xx, 1908, *p.* 284).—**C. Herman.**—15,000 to 48,000 cases of measles are notified annually in New York City. The expense of disinfecting is considerable. Herman thinks that it is unnecessary for the following reasons: Infection takes place almost always at the beginning of the catarrhal stage, and it is doubtful if measles is contagious after the eruption has reached its height. The contagious material soon loses its infectious character. Thorough airing of the rooms and cleansing of the walls are sufficient. J. D. Rolleston.

Vulvo-vaginitis in children (*'Pediatrics,'* 1908, *p.* 288).—**A. J. Ronginsky** thinks that vulvo-vaginitis of gonorrhœal origin, though prevalent in large cities and congested districts, is not so common as is supposed. All infectious diseases of infancy and childhood may produce a vulvo-vaginitis which subsides as the general condition improves, but leaves the mucous membrane in a state of diminished resistance. Among the other causes which give rise to leucorrhœa are anæmia, chronic valvular disease, masturbation, and the irritation produced by eczema and frequent powdering of the genital region. J. D. Rolleston.

Anorexia nervosa in an infant (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 321).—**J. P. Crozer Griffith** records the history of a physician's son, who from the age of nine months after recovery from ileo-colitis showed a distaste for food in general, and a special abhorrence for any new article of diet. Instead of the symptoms disappearing soon, as is usually the case in convalescent infants, they were present at six years. In the absence of any evidence of organic gastro-intestinal disease the diagnosis of hysteria was made. It was only by forced feeding that the excessive emaciation which often occurs in older patients was prevented (*cf.* British Journal of Children's Diseases, 1908, p. 220). J. D. Rolleston.

Analgesics in pædiatric practice (*'Arch. of Pediat.,' vol.* xxv, 1908, *p.* 368).—**Le Grand Kerr** reviews the various analgesics, and concludes that all are more or less objectionable in childhood because of their liability to form a drug habit, the dangers of an overdose, the irreparable damage done to a developing nervous system by their prolonged use and the irritant effects which most of them possess. J. D. Rolleston.

Empyema and gangrene of the lung complicating typhoid fever ('*Arch. of Pediat.*,' *vol.* xxv, 1908, *p.* 347).—**D. J. Milton Miller.**—A girl, aged 7 years, in the third week of a moderately severe attack of typhoid showed marked prostration, fœtor of breath, constant cough but no sputum. Signs of fluid were found in the left chest; 350 c.c. of offensive turbid fluid were removed, and a rib was resected the next day. Death took place three days later. Cultures showed strepto- and diplococci, but no typhoid or tubercle bacilli or pneumococci. There was no autopsy.

J. D. Rolleston.

Scarlet fever: recurrence and pseudo-recurrence ('*Jahrb. f. Kinderheilk.*,' *Bd.* 67, *H.* 7).—**Ferraris-Wyss** considers again the numerous instances of scarlet fever recurrence towards the end of a scarlet fever illness. He states that it is not always easy to determine whether we have a recurrence of scarlet fever or another eruption similar in appearance, though there is no doubt of the existence of recurrent scarlet fever. The ætiology of scarlet fever recurrence is obscure; apparently a family predisposition exists. The supposition of a re-infection from fresh cases in an acute stage, though not thoroughly substantiated, would appear to justify a separation of old from new cases of scarlet fever. The prognosis of recurring cases is not any more serious than in initial cases. J. E. Bullock.

The tuberculin ophthalmic reaction ('*Berlin. klin. Wochens.*,' *No.* 47, 1907).—**Von Sigismund Cohm** points out that the occurrence of an ophthalmic reaction after the employment of a 1 per cent. solution of tuberculin indicates a strong probability of tuberculosis; a negative reaction does not entirely exclude tuberculosis, for 50 per cent. of acute cases of phthisis do not react. Slight cases of phthisis give only exceptionally a negative reaction. Cases of typhoid fever show the ophthalmic reaction in a striking degree especially during convalescence. After a subcutaneous injection of tuberculin a longer time is necessary to reproduce the local reaction in the eye: or, if it has not occurred previously, to produce it. A single instillation produces in the non-tuberculous adult (not in infants), after a sufficiently long interval, some over-sensitiveness in the eye. In the tuberculous the effect extends also to the other eye. J. E. Bullock.

Tuberculosis in children ('*Wien. med. Wochens.*,' *No.* 12, 1908).—Respecting tuberculosis of the lungs **Kirshner's** statistics show that the disease affects boys most between the tenth and fifteenth years; that in girls between ten and fifteen years of age it forms almost the fourth of all fatal cases, and between five and ten years of age more than the tenth part of all fatal cases. While in the higher age classes in the last twenty years in all civilised countries an increasing number of fatal cases is noticeable in both sexes as age advances, there has been even greater increase in childhood. In both sexes tubercular disease claims most victims after the eleventh year. Under the head of infectious diseases (measles, etc.) as causes of death, in the second year of life, tuberculosis takes the fifth place as an accompaniment; in the first and third up to the fifth years of life it takes the fourth place; from the sixth up to the tenth year of life it takes the third place; and from the eleventh year of life upwards it takes the first place as an accompaniment. Therefore he urges that tuberculosis in children must be sedulously guarded against. J. E. Bullock.

A case of acute and transitory dilatation of the heart in an infant (*'Lancet,' May* 30, 1908).—**E. Lloyd Jones** gives brief notes of a case of an infant, aged 15 hours, who had marked tonic spasm involving the respiratory muscles. The patient was deeply cyanosed. Chloroform was sent for, and meanwhile, the head being extended, compression of the chest was carried out. The intense cyanosis lessened. The heart was then examined, the deep dulness being normal in extent. An hour or so later the spastic condition was so intense that respiration had practically ceased. The cardiac dulness was now almost double its former breadth, and a loud systolic murmur was heard all over the chest, but most marked in the pulmonary area. Chloroform having arrived it was administered until the spasm entirely ceased. The cardiac dulness then became normal and the loud murmur entirely disappeared. The signs were probably attributable to extreme dilatation of the right side of the heart causing tricuspid regurgitation, and possibly there was a leak through the foramen ovale, which is patent in an infant of 15 hours. The child was born with difficulty, and the head had been much compressed with the forceps. The child is now eight months old and perfectly well. James Burnet.

Latent nephritis in children (*'La Presse Médicale,' January* 25, 1908, *p.* 61).—**A. Romme** draws attention to an interesting paper on this subject by O. Herbst (*'Jahrb. f. Kinderheilk.,'* 1908, *vol.* xvii, *p.* 13) showing the diagnostic importance of a microscopic examination of the sediment obtained by centrifugation. The interesting point is that in all the nine cases observed by the author of children between the ages of eight and fourteen years the nephritis was absolutely latent. Only one had an insignificant amount of albumin; in all the others the urine examined frequently contained no albumin, and was otherwise normal as regards appearance, quantity and specific gravity. The clinical symptoms were also little marked, and consisted only of headache, pallor and fatigue; there were neither heart complications, œdema, nor retinal changes. The nephritis was, in fact, latent, and would not have been noticed but for examination of the urinary sediment, which contained isolated blood-corpuscles, leucocytes, hyaline, granular, and blood-casts. To ascertain to what extent a diagnosis of chronic hæmorrhagic nephritis is warranted on these grounds, Herbst examined in the same way the urines of 282 healthy children, and found in 43 per cent. more or less the same elements. He therefore concludes that the presence of a few hyaline casts has no pathological significance, but that they may appear after certain slight disorders of circulation. Isolated red cells and leucocytes have the same significance. With regard to granular casts, he considers them to be the result of a desquamation of renal epithelium, analogous to that of other mucous membranes, and which, without indicating a condition strictly pathological, means that the kidney is, temporarily perhaps, in a condition of less resistance. In short, these elements only have a pathological significance when they are relatively abundant in the sediment and specially when blood-casts are present, which probably point to a hæmorrhage into the renal tubules. Of the 282 children 5 per cent. had a sediment of this kind in their urine, and the author explains this fact by their condition of life. They were asylum children, offspring of poverty-stricken parents affected with tuberculosis and alcoholism, themselves scrofulous, eczematous and ill-nourished. Their kidneys, therefore, were easily vulnerable, and the author considers it probable that they were really the subjects of a latent nephritis, but urges further researches on the urine of healthy children in the better conditions of society to elucidate the question. VINCENT DICKINSON.

Visceral crises in purpura ('*Rev. Mens. des Mal. de l'Enf.,' December, 1907, p.* 529).—**L. Guinon** and **Vielliard** contribute an interesting paper on this subject, giving details of sixteen cases and a useful bibliography. The pathology of purpura itself being obscure, that of accidents arising during its course is still more so. Spolverino and Aiello regard these crises as an infective enteritis. Without denying the very probable digestive origin of certain cases of purpura, it is evident that these abdominal paroxysms have nothing in common with enteritis except in the occurrence of a few dysenteric stools. Two theories remain, one which refers all these crises to the production of sanguineous exudations in the intestines and peritoneum, and the other which maintains that their nature is purely nervous. The first theory (that of *intestinal purpura*) is seductive, owing to the frequent parallelism between the appearance of the abdominal crises and those of the cutaneous eruption, but there are several objections to it. On the one hand, there are the cases where there are no hæmorrhages into the intestinal wall, and those where there is a tremendous disproportion between the slight hæmorrhagic spots of the intestine and the violence of the pains. On the other hand, peritoneal and intestinal petechiæ are found at the autopsies of cases where there have never been any violent colics. Thus in one case there were numerous purpuric patches all over the mucous membrane of the stomach and duodenum found at the autopsy of a case of infective purpura in which there had never been any serous abdominal pain. Gomot suggests that visceral hæmorrhage does not produce painful crises except when it occurs in layers of the intestinal wall. The *nerve theory* is not new, having been propounded by Rendu, Couty and Faisans, to explain the purpura itself. It is generally admitted that purpura is of a toxi-infective nature, the causal poison having an elective action on the nervous system, especially the medulla, as shown by the symmetry of the petechial eruption, and by the analogy of the abdominal crises with the gastric crises of tabes. Couty places the nerve lesion in the sympathetic plexus and compares the crises of purpura to lead colic, which he localises in the solar plexus. They have also some resemblance with certain supra-renal symptoms, and purpuras have been described accompanied by hæmorrhages in the supra-renal glands (Blaker and Bailey). In none of the authors' cases, however, was there any evidence of such a cause for the crises, which may be attributed with greater probability to a temporary invagination of hæmorrhagic portions of the intestine. VINCENT DICKINSON.

The rheumatic origin of certain forms of exophthalmic goitre ('*La Clin. Infant.,' February* 15, 1908, *p.* 109).—**H. Vincent,** in a communication to the Société des Hôpitaux, says that congestion and swelling of the thyroid which occurs in acute rheumatism may be so intense as to produce all the phenomena of Basedow's disease. The well-known infrequency of exophthalmic goitre in children led the author to seek for a probably rheumatic origin in the published cases. Exophthalmic goitre is unknown in nurslings and is very exceptional before the age of eight years; Variot and Roy published a case at 4½ years. It is especially after the tenth year that the disease begins, and is then far from common. Comby only met with fifty cases altogether during childhood. Moreover, infantile rheumatism is rare before five years of age, and only becomes common between ten and fifteen years, and, although thyroid swelling does occur in a certain number of these cases, it is much rarer than in adults. It cannot be denied, however, that there is some connection between the extreme rarity of exophthalmic goitre in children, the frequency, less than in the adult, of rheumatism below the age of ten years, and the little-marked swelling of the thyroid in the course of acute rheumatism at this latter age. It must be remembered also that the thyroid is not completely developed until puberty, and for this reason, perhaps, thyroid complication is more frequent after this epoch. Two cases of rheumatic thyroidism are reported. In the first, aged 14 years, there was a history of acute rheumatism at the age of twelve, complicated with mitral insufficiency. Two years later she had another attack of acute rheumatism, articular and muscular, during which palpitation and tachycardia, 130–140. The signs of mitral insufficiency were not marked, and the heart was not dilated. The thyroid was strikingly enlarged. In the second case, that of a girl, aged 15 years, during an attack of articular rheumatism of moderate intensity and without any cardiac lesion, there was tachycardia 120 per minute, although the temperature did not rise above 39° C. The thyroid was slightly enlarged, and this enlargement disappeared when convalescent, a little prior to the disappearance of the tachycardia.

VINCENT DICKINSON.

A case of paratyphoid fever (*'Med. Corresp. Blatt. der Würt. Ærtz. Landes.,' January* 25, 1908).—**Geissler** showed at the Heilbronn Hospital a boy, aged 15 years, who had been ill eight days with headache, lassitude, diarrhœa. On the eighth day temperature was 39° C.; slight bronchitic sounds; headache severe. Three days later roseola. The fever lasted another ten days. Ficker's reaction was negative; there was a positive agglutination with paratyphosus bacillus. Paratyphoid, as in this instance, exactly resembles true typhoid; only as a rule the duration is shorter, lasting, as in this case, twenty-one days. The treatment is exactly the same and the disease exacts the like precautions. M. D. EDER.

A rare complication in perityphlitis (*'St. Petersburg med. Wochens., April* 12, 1908).—**Heuking** brought forward at the St. Petersburg German Medical Union the case of a six-year-old boy where acute yellow atrophy and death followed a third attack of appendicitis for which he had operated. Two months after this operation jaundice set in and a diagnosis of subphrenic abscess was made. No pus was discovered on exploration and operation (under chloroform). At the post-mortem acute yellow atrophy of the liver was found and a much enlarged spleen. He does not consider that the chloroform caused this condition, although it may have determined the rapidity of the death. M. D. EDER.

On suckling (*'Med. Corr. Blatt. d. Würt. Ærtz. L. ver.,' May* 2, 1908).—**Mutschler**, whilst vaccinating the children, took the opportunity of inquiring as to whether the children were breast fed. Out of 915 children, 352 had not received the breast at all (39 per cent.), 473 had been suckled for too short a time (51·6 per cent.), whilst only 90 had been regularly fed at the breast (9·8 per cent.). Taking the usual difficulties into account he considers six months a fairly satisfactory length of time for breast feeding. The 473 children had been nursed less than this; out of these 331 for less than twelve months and 142 for varying periods up to six months.

M. D. EDER.

The oatmeal diet in the treatment of diabetes mellitus (*'Journ. of the Amer. Assoc.,' March*, 1908).—**Herrick** supports von Noorden's claims for the oatmeal diet in diabetes. In the milder forms of the disease there were no bad effects, but the benefits seemed slight. In moderately severe cases it seems to be especially useful in establishing a tolerance for carbohydrate and in warding off impending coma. The author also found it to exert a very favourable influence in the diabetes of children, if employed early.

T. R. Whipham.

Hysteria in children (*'Arch. of Pediat.,' February*, 1908).—**Price** finds that girls are more frequently the subjects of hysteria than boys, though in the latter the symptoms are often more severe. As predisposing to the condition, heredity, faulty environment and education, and any condition which lowers the vitality or causes a continuous irritation of the nerve centres, must be taken into account. The symptoms are similar to those in the adult with slight modifications, and in treating them the author chiefly relies on suggestion in one form or another, though the possibility of the existence of an underlying neuropathy must not be lost sight of. Hypnotism he condemns, as the experiments of Charcot and others, he considers, have shown it to be only artificially induced hysteria. T. R. Whipham.

Erepsin in the intestinal canal of the fœtus (*'Jahrb. f. Kinderheilk.,' Bd.* 691).—**Langstein** and **Soldin** have examined the intestines of a new-born calf for the presence of erepsin, and also the intestinal juice of human fœtuses from four and a half to seven months. They found erepsin to be present in the calf and in the intestines of viable fœtuses, but could not detect its presence in fœtuses at an earlier age. T. R. Whipham.

Retention of urine in adolescents (*'Wien. klin. Rundschau,' October*, 1907).—**Blum** reports the case of a boy who, when seen, was aged 13 years. At the age of seven he had a fracture of the frontal bone and severe concussion. When eleven and a half hæmaturia was noticed, and later incontinence of urine both by day and by night. The genital organs were small and badly developed, the prostate being rudimentary. The bladder was distended to above the umbilicus. The knee-jerks were much exaggerated. The urine was drawn off and was found to be clear and free from albumin. The temperature, however, rose to 104° F., and the patient, after becoming rapidly worse, died on the following day. At the necropsy acute hæmorrhagic pyelo-nephritis with dilated ureters was found in both kidneys. No stricture, valve, or other abnormality in the urethra which could have caused a mechanical obstruction to the outflow of urine, was present. Polio-myelitis, however, was found in the cord at the level of the centre for micturition, and to this, in the absence of any obstruction in the urinary passages, was the retention primarily attributed. The case seems to prove conclusively the existence of a vesical centre in the lumbar region of the spinal cord.

T. R. Whipham.

The serum treatment of scarlet fever (*'Deut. med. Woch.,' February*, 1908).—**Pulawski** has treated 103 cases of scarlet fever since 1904 with a serum prepared by injecting a horse with streptococci from a severe case of scarlet fever. Very small doses were used, and only one case was injected three times. The author's results were, roughly speaking, three times as good as in those cases which were treated by the ordinary methods. No bad results from the serum were observed. T. R. Whipham.

Pathology.

Alternate transmission of congenital syphilis ('*La Pediatria,*' *February*, 1908, *p.* 102).—**P. Mazzeo** gives an interesting communication on this subject. Alternate syphilitic transmission means the birth of a healthy infant preceded and followed by that of a syphilitic infant. The author describes two cases. He agrees in the main with the opinions of Matzenauer, that the transmission of syphilis by the mother happens through intra-uterine infection of the fœtus; syphilis occurring during pregnancy can only be transmitted to the fœtus by intra-placental means through intra-uterine infection; hereditary transmission through an infected ovum has not been demonstrated; transmission through a mother syphilitic before conception can only take place by intra-uterine infection of the fœtus; passage of bacteria from the woman to the fœtus pre-supposes a placental infection; the intensity of the placental infection bears no relation to that of maternal and fœtal infection; very slight changes in the vessels are sufficient to render the passage of bacteria possible. In twins where one is healthy and the other diseased the corresponding placenta is in the same state; in cases of so-called purely paternal transmission the maternal portion of the placenta is diseased, although the woman appears healthy. The intensity of congenital syphilis which gets less in time cannot be directly attributed to attenuation in the virulence of the bacteria, but is probably due to the fact that in inveterate maternal syphilis, which is therefore already attenuated, the placental affection is verified relatively later, more slowly and more rarely than in recent syphilis, which is therefore in its full virulence. Paternal hereditary transmission has never been demonstrated as recurring from an infected sperm and an infected ovum. Every mother of a child with congenital syphilis is always syphilitic; even though she may seem healthy previous infection cannot be excluded because there have been no previous syphilitic symptoms; every mother of a child affected with congenital syphilis is immune. VINCENT DICKINSON.

Therapeutics.

Chloride of sodium in the food of sick children ('*La Clin. Infant.*,' *July*, 1908, *No.* 14, *p.* 427).—**M. Pehu.**—The researches of Achard and Widal on the metabolism of chloride of sodium in health and disease have proved that it is not a substance whose ingestion and passage through the organism must be considered unimportant. On varying the proportion of salted food striking local and general changes are produced; in one group of diseases good results follow an increase, while another group calls for a diminution or suppression of salt. (1) *Hyperchlorated diet:* Nobécourt and Vitry proposed to give to premature infants small doses of salt to increase their weight. They administered 25 to 50 centigrammes, and even 1 gramme with favourable results, best with small doses. Chloride of sodium in the milk improved the appetite, and had a good effect both in lienteric diarrhœa and in constipation. The mechanism of its action on the body-weight is difficult to explain, but is probably due to increased appetite and gastric secretion and general stimulation of nutrition with retention of water. Also Merklen found that in measles the administration of salt checked the loss of weight. (2) *Hypo- or achlorated diet:* Richet and Toulouse proved that the bromides, especially of potash, acted more efficaciously when given with a salt-free diet. The deprivation of this substance produced a greater affinity of the nerve-cell for the bromide; attacks which under this treatment had disappeared recurred on returning to ordinary diet. The child tolerates deprivation of salt better than does the adult, and under these conditions bromide poisoning is never seen. The dechloridation cure has been applied to dropsical affections, as it is a fact that the suppression of salt in the food causes a disappearance of anasarca. If salt is imperfectly eliminated for local or general reasons it tends to draw to itself by osmotic power a greater or less proportion of the water of the blood, which it locks up in the cellular tissue and causes œdema. Nobécourt and Vitry obtained prompt diminution of ascites in a case of tubercular peritonitis by a salt-free diet. This application is especially helpful in nephritis, especially when accompanied by serous effusions, local or general, and in these cases the use of milk, until recently looked upon as the unique resource, cannot be advocated, since it contains 1 gr. 50 to 1 gr. 70 chloride of sodium per litre. As to ordinary diet, it contains an average of 10 to 12 grains of salt for every twenty-four hours, so that such food is, in the case of nephritis with œdema, particularly harmful, because the quantity of salt eliminated by the kidney is always less than that taken into the system. For these reasons Widal and Javal advocate a diet of red or white meat (except in uræmic cases), fresh-water fish, eggs, potatoes boiled or cooked with butter, rice and vegetables, such as peas, carrots, lettuce, beans, etc. Most of these articles can be prepared with vinegar, lemon, tarragon and thyme. Sweets are useful, especially chocolate, but pastry prepared with both salt and sugar must be forbidden. Ordinary bread must not be used. Water should be the principal beverage, but wine is permissible in moderate quantity. Sea fish, oysters, mussels and preserves are forbidden. The indications for such dechlorated diets are many: besides serous effusions, it may be prescribed in heart disease, and especially in nephritis with œdema, provided the kidneys are permeable and not the seat of too pronounced a degeneration. By such measures also it may be hoped to prevent renal complications in scarlatina as advocated by Dufour, Pater and others, although on the other hand Lesage and Cordouan, by experimenting with a diet of milk with the addition of 10 grammes of salt *per diem*, found only one child out of twenty-seven who had nephritis and uræmic attacks. The whole question has been re-investigated by Nobécourt and Merklen (Soc. de Pediat., 1907). They divided the patients into three classes; a certain number had a diet rich in salt (barley-water, sugar, butter, meat); others had exclusively milk; others, besides barley-water, rice and potato, had 5 grammes of salt *per diem*. The results showed that a milk diet was best, the chlorides being regularly eliminated by the urine while albuminuria was infrequent. The conclusion, therefore, is that a total elimination of salt from the diet of children with scarlatina is too radical a measure and at the same time inefficacious. On the other hand, a salt-free diet can render valuable service in a child when nephritis or heart lesion is accompanied with anasarca, as well as during affections of the serous membranes when the effusion resists the ordinary methods of treatment.

VINCENT DICKINSON.

Otology, Laryngology, and Rhinology.

A case of acute internal hydrocephalus secondary to streptococcal infection of the labyrinth ('*Archives of Otology,*' *April*, 1908).—**Sydney**

Scott describes this rare case. It throws light on the early diagnosis of labyrinthine infections, and is instructive because an operation might have saved the patient's life, and it was possible to demonstrate post mortem the connection between the labyrinth mischief and the attendant hydrocephalus. The patient was a boy, aged 14 years, admitted for the radical mastoid operation. The fifth day after the operation headache was complained of, and on the sixth day the vomiting, which had lasted from the time of operation, ceased. The headache increased and temperature rose to 102° F. No other symptoms appeared and a further operation revealed no cause for the condition. The pathological findings, twenty hours after death, are given in full. Briefly speaking they were as follows: Chronic suppurative otitis media, left side; recent radical mastoid operation; obliteration of lateral sinus; acute streptococcal labyrinthitis; perineuritis seventh and eighth cranial nerves; secondary internal hydrocephalus. The examination of the fluid found in the labyrinth gave *Streptococcus pyogenes* in almost pure culture. The case should be read *in extenso*. MACLEOD YEARSLEY.

A contribution to the study of early antrotomy in certain acute suppurations of the middle ear (*'Annales des Malad. de l'Oreille, etc.,' May*, 1908).—**Cabouche,** in this paper, gives illustrative cases of a variety of middle-ear infection occurring in children, where from the very onset antritis is the predominant lesion, quite overshadowing the otitis. Clinically two forms are met with—the painful and the latent. The former is characterised by sharp pain in the antral region, the child complaining almost exclusively of that part. There is exquisite tenderness on pressure over Macewen's triangle. The membrana tympani shows congestion limited to the posterior superior quadrant, which bulges. Incision is followed by abundant, but not profuse, discharge. In the latent variety pain is trivial. There is purulent discharge, without antral pain or tenderness and without temperature. The membrane resembles that in the other form. Osseous lesions are, however, prone to be very extensive, a feature due, not to pus retention, but to active ulcerative processes. Early antrotomy is essential and should not be delayed.

MACLEOD YEARSLEY.

Surgery.

A case of suppurative parotitis (*'Lancet,' August* 8, 1908).—**P. Maynard Heath** publishes a note on a case which was sent to the Evelina Hospital by Dr. W. A. Montgomery. Three weeks before admission the baby, aged 3 months, became fretful and feverish, with slight convulsions. Squint developed with head retraction; Cheyne-Stokes' respiration set in, which lasted for twenty-four hours. The symptoms gradually subsided, but two days before admission to hospital the child developed a swelling below and behind the left ear. This swelling corresponded to the parotid. The skin over it was found to be somewhat œdematous, but there was no fluctuation. The head was drawn back and to the left, with marked rigidity of the neck muscles on the left side. There were no signs of intra-cranial disease, and the temperature was 99·2° F. On pressure over the swelling a bead of pus appeared at the orifice of Stenson's duct. The pus gave a pure culture of *Staphylococcus pyogenes citreus*. The swelling was fomented and the mouth cleansed. In a week the condition had completely cleared up. The child was breast fed, and otherwise healthy. There was no disease of the mother's nipple. The source of infection was in all probability the dirty "comforter" which was being used in this case.

James Burnet (Edinburgh).

The treatment of congenital dislocation of the hip by manipulation (*'Med. Record,' May* 23, 1908).—**Abbott** records thirty-one cases thus treated by him. The ages of the patients varied from two to thirteen years, the greater number being females. Twenty-nine were unilateral and two bilateral. Lorenzo's operation was performed, but in some cases the plaster-of-Paris bandage was extended below the knee so that the after-position of the limb might be better maintained. In three cases extension was used prior to the reduction. The author advocates early operation, as development in a dislocated joint is much retarded, while after reduction the whole limb grows in a normal manner. Preliminary extension lessens the amount of force necessary at the time of reduction, and should always be employed in older patients. The total number of joints operated upon by the author was thirty-three; of these twenty-two were successful, nine resulted in an anterior position, while two were complete failures. T. R. Whipham.

Gonorrhœal pyelitis in a child (*'Riv. di Clin. Pediat.,'* 1908, *p.* 367). —**A. Magrassi.**—A girl, aged 6 years, was admitted to hospital for purulent cystitis. About a year previously she had suffered from vulvo-vaginitis, and for the last six or seven months she had been wasting and had had irregular pyrexia. Salol and helmitol internally and repeated washing out of the bladder with permanganate of potash, protargol, and sulpho-carbolate of zinc produced no effect. Palpation of the abdomen revealed a round, smooth, and only slightly tender swelling in the region of the left kidney. No foreign body was detected by X rays. The urine was acid and very turbid, and on standing showed an abundant viscid sediment, which consisted mainly of leucocytes with numerous intra- and extra-cellular gonococci. There were no tubercle bacilli. The right kidney being found healthy, the left kidney was removed. The urine soon became clear, and the child made a good recovery. J. D. Rolleston.

The final results of tracheotomy (*'Deut. med. Wochens.,' p.* 725. 1908).—**W. Wolf** instituted an inquiry as to the fate of those children who had been tracheotomised for laryngeal diphtheria between 1895 and 1906 in Trendelenburg's Clinique at Leipzig. During this period 404 patients were tracheotomised, of whom 264 were discharged cured. The high mortality was due to the fact that many of the patients were moribund on admission. Wolf was able to trace 173 of these patients: 145, or 85·5 per cent., were free from any symptoms; 18, or 10·7 per cent., were singers or athletes; 24, or 14·2 per cent., since the operation had suffered from hoarseness, shortness of breath, and colds; 7 cases, or 4·1 per cent., presented more serious sequelæ; 4 showed signs of tuberculosis, but in 3 there was a family predisposition. One had a permanent fistula, and the other two had had repeated attacks of pneumonia. No case of cicatricial stenosis was observed. This was probably due to the fact that the lower operation had been performed in every case. Wolf concludes that serious sequelæ after tracheotomy are not frequent, that the mortality from tracheotomy and intubation are exactly the same, and that Landouzy's statement that tracheotomy predisposes to tuberculosis is not justified (*cf.* British Journal of Children's Diseases, 1907, p. 454). J. D. Rolleston.

Retro-pharyngeal abscess in a girl, aged 11 years (*'Dom. Med. Monthly,' May*, 1908).—**Carpenter** relates the case of a girl who, during an epidemic of influenza, was taken ill with fever, sore throat, enlargement of the cervical lymphatics, etc. The tonsils were very swollen and the pharynx slightly inflamed. Three days later the child seemed better and the fever subsided ; at the end of a week she was well, except for torticollis and snoring at night. There was then a swelling in the posterior wall of the pharynx which fluctuated. It was incised and recovery rapidly followed. The point of the case is its rarity after the fifth year, while 60 per cent. of the cases occur in infants under twelve months old.

J. PORTER PARKINSON.

Review of Book.

TUBERCULOSIS IN INFANCY AND CHILDHOOD. By various writers. Edited by T. N. KELYNACK, M.D. Baillière, Tindall & Cox. Pp. 376, price 12*s*. 6*d*.

THIS book is disappointing because the standard is not sufficiently high for a work of such pretensions. A book which professes to deal with a special subject—and a very important subject to boot—should display profound erudition and an intimate acquaintance with the current literature of the subject, and that is what this book does not do. As an example, take an important section, viz. that on "Abdominal Tuberculosis," a chapter of which is contributed by Mr. J. A. Coutts, M.B., and its many shortcomings are obvious. He appears to have overlooked the work of the leading authorities on children's diseases in this country, contributed to the special discussion on the subject of "Tuberculous Peritonitis" at The Society for the Study of Disease of Children in vol. iii (1902–3) of the 'Reports.' In addition to much other valuable information, he would have there learned the value of rectal bi-manual examination in the diagnosis of abdominal disease in young children. What he describes as "by far the most frequent and the greatest difficulty in diagnosis in cases of rickets where wasting and intestinal trouble are accompanied by abdominal distension of more than ordinary extent," should have had the above clinical note attached to his remarks as an indispensable complement.

This workaday world welcomes Mr. Coutts' personal observations, but not to the exclusion of the views and experiences of the recognised authorities at home and abroad. The casual mention of the views of a couple of medical acquaintances does not supply the medical reader with the material he looks for and to which he is entitled in a work of reference.

Dr. David Newman, in his contribution, "Tuberculosis of the Urinary Tract and Genital Organs in Early Life," might with advantage have dived more deeply into the 'Reports of The Society for the Study of Disease in Children' than he has already done. In the discussion to which we have drawn attention observations are also to be found on the subject of tuberculosis of the genital organs in girls and in boys. Therein is described a method of detecting disorders of the female internal genitalia by rectal bi-manual examination during life, and some interesting clinical observations on this subject are there recorded, which our readers may peruse with advantage.

Mr. N. Bishop Harman contributes a chapter on "Tuberculosis of the Eye." His account of tuberculosis of the choroid is conventional, and appears to take very little notice of recent work on the subject. Surely Mr. Harman has read that chronic tubercles of the choroid are by no means always solitary. This reviewer of the very latest literature on the subject of tuberculosis of the choroid, when alluding to the observations of George Carpenter and Sydney Stephenson on obsolescent tubercle, states that these lesions are syphilitic. It would be interesting to know what grounds Mr. Harman has for this singularly dogmatic statement. Another instance of hasty generalisation is the statement on page 139 that chronic tubercle of the choroid which has undergone resolution does not show the same amount of pigmentary disturbance such as is seen in the healed choroidal lesions of syphilis. A mere nodding acquaintance with what has been written on that subject should have prevented Mr. Harman falling into this error. This article also is presumed to be the very last word on the subject. But our readers will doubtless form their own judgment on its intrinsic value.

But we are weary of fault-finding, and we leave this book with a sense of relief now that we have finished with it. For the expert on children's diseases it is most disappointing, and the average reader will find the numerous excellent text-books much more trustworthy and much better reading.

We cannot congratulate the publishers upon the format. The appearance of the printed page is weak and wearisome. The type, suitable to the narrow columns of a newspaper, is too small for the average reader's comfort, and but for the liberal spacing would be trying to the strongest vision. The heavy and highly glazed paper seems hardly justified by the presence of the few and not very important half-tone blocks.

Correspondence.

THE INFECTING ORGANISMS IN EMPYEMA.

To the Editor of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

SIR,—In the Wightman Lecture for this year the author, in discussing the origin of empyemata in children, states (BRITISH JOURNAL OF CHILDREN'S DISEASES, p. 325) that "the organisms which are most commonly at work in setting up these conditions are the pneumococcus, the *Streptococcus pyogenes*, and the tubercle bacillus; other organisms, such as *Bacillus coli*, staphylococcus, etc., are quite rare." While agreeing with the writer that the pneumococcus is the organism which is most frequently found in the purulent exudate, my experience differs from his as to the relative frequency of streptococcal and staphylococcal infections. I have found that the staphylococcus is the next commoner organism in such cases to the pneumococcus, while it is the streptococcus that is but rarely met with. It would be interesting to learn if the experience of others confirms Sir Watson Cheyne's assertion.

I am, Sir, yours obediently,
T. R. WHIPHAM.

Park Street, W.

THE
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OF
CHILDREN'S DISEASES.

VOL. V. DECEMBER, 1908. No. 12.

Original Articles.

A CASE OF CARCINOMA OF THE STOMACH IN A BOY AGED FOURTEEN YEARS AND NINE MONTHS.*

By R. BARCLAY NESS, M.A., M.B.,
Assistant Physician, Western Infirmary, Glasgow;
AND
JOHN H. TEACHER, M.A., M.D.,
Assistant Pathologist, Western Infirmary, Glasgow.

By Dr. Ness :

The patient, R. McK—, a boy aged 14 years and 9 months, was admitted to Ward 31 of the Western Infirmary, Glasgow, on August the 27th, 1906. The facts in the following statement have been largely obtained from the report in the ward journal, written by Dr. Stewart, House-physician.

The patient when admitted had intense jaundice, which he said had been present for about two months. He gave a history of having suffered for about two years from paroxysms of abdominal pain at long intervals, sometimes of two or three months. These paroxysms at first were of great severity but of short duration, lasting often only a few minutes. For eight months before admission, however, they had become gradually more frequent, and even more severe, so that about the beginning of July the patient was forced to give up work and take to bed. This statement as to the long history of pain is of importance, in view of the fact that at the post-mortem examination a chronic gastric ulcer was found, which may have been the origin of the malignant disease. About the middle of May the patient observed for the first time a *small hard lump* in the position of the *umbilicus*. It was neither painful nor tender, but the skin over it became red. Two months later a little suppuration occurred, and a small quantity of pus escaped. From that time onwards there had been occasionally a little discharge. The *jaundice* occurred in the latter part of June. Previous to that time there had been none. After its first appearance it gradually became more intense until the middle of July, after which it varied somewhat in degree. The action of the bowels and the character of the stools had hitherto been normal, but with the onset of the jaundice the motions became light grey in colour, until on the taking of medicines prescribed by the patient's doctor they changed to a dark slate colour. No history of melæna was obtained, but three days before the admission the patient vomited a breakfast-cupful of blackish material, streaked with bright red blood. This occurred in the early morning before he had taken any food, and was preceded by some nausea. There was no repetition of this symptom until after admission, when it happened once again.

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* Read before the Medico-Chirurgical Society of Glasgow, November the 6th, 1908.

The early history, family history, and social condition of the patient present nothing of any great importance. The patient had several of the specific fevers in childhood. He is one of a family of eight, four of whom died in early childhood. The mother suffers from a chronic pulmonary affection, the precise nature of which is uncertain, and the father from chronic rheumatism. The social condition of the family was poor, the parents and four children living in a room and kitchen. The supply of food, however, was said to be sufficient.

Condition on and after admission.—The boy was very poorly nourished, and weighed on July the 25th 5 st. 6 lb. There was well-marked jaundice, as indicated by the bright yellow staining of the skin, and of the sclerotics, the character of the urine and fæces, and the itchiness of the skin. There was also distinct anæmia, indicated by the pallor of the cheeks, lips and conjunctivæ. The patient lay fairly comfortably in bed in any position when free from pain, but when this occurred, as it did from time to time in front of the abdomen, he preferred the dorsal decubitus.

The digestive system and abdomen.—The tongue was moist, flabby, and slightly furred. The teeth were in good condition. There was no sickness nor vomiting of any account until September the 10th, when the patient vomited half a pint of brownish matter, which gave the positive tests for blood. The bowels were not constipated, but occasion was taken from time to time to have a more thorough evacuation by means of laxatives and enemata. The stools were of grey colour and very offensive. On one occasion a stool was found to be blackish, due evidently to altered blood, the source of which must have been high up in the alimentary tract.

The little *umbilical tumour* referred to in the history was about the size of a marble and protruded most in its central part. The skin over it was thin, red, adherent, and covered with a greenish yellow crust. The tumour was neither painful nor tender and was fixed to the deeper structures. No change occurred in the physical characters of this tumour till the latter period of the illness, when it was treated with a wet boracic dressing. This caused the separation of the crust and the exudation of a small amount of thin, bile-stained pus. The examination of films prepared and stained for tubercle bacilli gave negative results.

The whole *abdomen* at first was slightly swollen, and everywhere over it there was obtained a frankly tympanitic note to percussion. A somewhat heavier stroke yielded a similar note over the umbilical tumour. Gentle palpation was freely permitted by the patient, but deep pressure caused considerable pain both in the epigastric region and in the right inguinal region immediately above Poupart's ligament. No tumour masses could be distinctly felt. The *liver* and *spleen* were evidently not enlarged, and no tumour could be felt over the region of the *gall-bladder.*

Later on—about three weeks after admission—there was evidently a considerable change in the condition of the abdomen. On deep palpation a small hard lump could be felt immediately above and to the left of the umbilicus. It was deeply fixed but not attached to the abdominal wall. Further, the abdominal distension became more and more marked. From the tension and the thrill obtained on percussing the abdomen with the finger there was evidently a considerable collection of fluid, but the dulness was limited to the front of the abdomen below the umbilicus, while the flanks remained clear to percussion.

The urinary system.—During the first week of residence the average quantity of urine passed per day was 27 ounces. Subsequently the average amount was less by nearly 10 ounces. The specific gravity was usually about 1020, with a maximum of 1028 and a minimum of 1015. The reaction was acid. The urine was always highly charged with bile-pigment, and the various tests for bile when applied gave positive results. Neither albumin, blood, nor sugar was present. The microscopical examination of the centrifugalised sediment showed the presence of bile-stained tube-casts in great abundance.

The circulatory and respiratory systems.—The pulse was regular in rate and rhythm but of low tension. The rate varied usually between 68 and 96 per minute. Only on three evenings did it rise to between 100 and 108. It was never very slow, as sometimes occurs in certain forms of jaundice. The examination of the heart showed the presence of a diffuse pulsation, the point of maximum intensity being in the fourth interspace 2½ inches to the left of the mid-sternum. The cardiac dulness lay within normal limits and the sounds were pure. There were no pulmonary symptoms and the examination of the lungs revealed nothing abnormal. Respirations varied between 18 and 24 per minute.

The temperature with slight daily variations kept usually below the normal line, the minimum and maximum temperatures being 97·2° F and 99·8° F.

A blood examination on September the 12th showed the presence of a leucocytosis of 20,000.

Diagnosis and treatment.—The jaundice and ascites were evidently due to pressure on the bile-ducts and the portal vein. In an adult, these symptoms associated with melæna, hæmatemesis, progressive anæmia, and loss of weight, would at once have suggested malignant disease, but the thought of such a cause was, if not excluded by the age of the patient, at least not entertained to the extent that it might have been had the patient been older. The umbilical tumour was also in favour of malignant disease, but the occurrence of tuberculous disease in this position in young subjects raised the question of tuberculous peritonitis and involvement of the retroperitoneal glands with pressure symptoms. The umbilical tumour, however, never showed any great tendency to break down as in tuberculous lesions—a condition which so often precedes the formation of a fæcal fistula.

As the patient was rapidly getting worse, and as little benefit was being derived from general and medicinal treatment, it was agreed after consultation with Dr. Alexander MacLennan, to have an exploratory laparotomy performed. The patient was therefore removed to the surgical wards on September the 20th, 1908.

Four days later five to six pints of fluid were removed from the abdomen, which was thereafter opened. Tumour masses were then detected within the abdomen, and a small nodule removed for histological examination. The examination of this, later, revealed the nature of the disease. Nothing radical was done at the operation, but an anastomosis was made between the gall-bladder, which was found distended, and the jejunum about ten inches below the pylorus. No beneficial result followed this, because, as was afterwards found, the cystic duct was involved in the tumour mass. The operation, however, made clear the incurable nature of the malady. The patient died on September the 29th, 1908.

By Dr. Teacher, who performed the post-mortem examination :

Abstract of pathological report, by permission of Professor Muir, Western Infirmary, Glasgow. No. 7790, September the 30th, 1908. R. McK—, aged 14 years and 9 months.

External appearances.—The body shows extreme emaciation and jaundice. The abdomen is distended. To the right of the middle line in the epigastric region there is an operation wound. Close to the umbilicus there is a hard mass the size of a marble, which proved to be a carcinomatous nodule. The tissues are highly bile-stained.

The thoracic organs showed nothing of note except the presence of a few small atheromatous patches in the aorta.

Abdomen.—The organs are glued together by soft fibrinous exudate.

There is no pus. The under-surface of the diaphragm is covered by a thick yellow layer like wash-leather, in which are seen many small secondary nodules. There are numerous nodules on the surface of the liver and spleen, but none in their substance.

The gall-bladder is extremely contracted and hard. The anastomosis between it and the intestine is perfect. In the portal fissure are a number of hard nodules, and a larger hard mass encircles the neck of the gall-bladder and hepatic ducts occluding them. The condition of these parts proved on microscopic examination to be due to carcinomatous infiltration.

The stomach contains dark brown material, apparently broken-down blood. In the lesser curvature a short distance from the pylorus there is an ulcer about three millimètres in diameter. It is approximately circular in outline and has thick edges. It appears to be a simple chronic ulcer, but there is an unusual degree of thickening of its margins and a considerable area of the stomach wall around it is also thickened and extremely hard. White hard masses extend from the outside of this area to the liver and gall-bladder; there are numerous small white nodules in the peritoneal coat, and the gastro-colic omentum is full of similar nodules. The appearances suggested carcinoma, and this was confirmed by the microscopic investigation. Between the hard infiltrated area of stomach wall and the pyloric ring there is a strip of apparently healthy wall about 2 cm. broad. There was a distinct stricture opposite the ulcer, not admitting more than one finger easily.

Masses of tumour are found in the root of the mesentery and nodules of various sizes all through it. Along the attachment of the bowel to the mesentery there is a chain of nodules, some of which are of considerable size and project into the lumen underneath the mucous membrane. None of them are ulcerated. There is a particularly large collection of nodules close to the caput cæcum, and the first part of the colon has been invaded to a considerable extent, producing a very distinct constriction of its lumen. There is also advanced infiltration of the meso-sigmoid and meso-rectum, and the tumour in the latter region has involved the ureters.

The kidneys showed nothing abnormal except slight dilation of the pelves.

Microscopical examination.—The tumour is a scirrhous carcinoma, showing throughout an extreme degree of fibrosis of the stroma and atrophy of the epithelial elements. The latter for the most part are small solid processes of polygonal cells; but in some of the younger secondary tumours an acinous arrangement was seen. Histologically the growth was quite characteristically gastric carcinoma. From the condition of the mesentery it could be definitely stated that the nodules along the intestine were secondary and produced by lymphatic permeation.

By Dr. Ness:

General remarks.—The chief interest of this case lies in the occurrence of carcinoma of the stomach in a patient so young as 14 years and 9 months. As is well known this is quite exceptional. Most of the cases occur after 40, very few after 70, and very few under 30 years of age.

In 34 cases tabulated by Perry and Shaw[*] the youngest patient is 32 years of age. In 3257 cases from various authors quoted by Osler and McCrae[*] there were 2·5 per cent. below the age of 30 years. In Osler's * own cases analysed by McCrae and numbering 150, 6 cases or 4 per cent. occurred under the age of 30 years, the youngest being 22.

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[*] 'Guy's Hospital Reports,' 1891, vol. xlviii, p. 143.

[†] 'Cancer of the Stomach,' by Osler and McCrae, 1900, p. 16.

In a clinical study of the subject Osler and McCrae † devote a chapter to cancer of the stomach in the young. According to these authors, thirty years of age may be taken as a convenient dividing line below which may be considered cancer of the stomach as occurring in the young. The figures already given support this view, showing as they do that only 3 to 4 per cent. of cases occur below this age. They deal with cases as they occur in these three decades, and show—

(1) *That cancer during the first decade* or the period of childhood is of extreme rarity as indicated by the fact that there are only six cases below the age of ten on record at the time when their book was published. These cases are referred to in detail. Four were infants under 6 weeks, one was a child aged 18 months; the last was Ashby and Wright's case ‡ of a boy aged 8 years. These authors admit themselves that the growth was more duodenal than gastric. One could not, therefore, state that the growth was primary in the stomach. These cases, therefore, in the first decade of life, if we exclude the last, may be regarded so far as congenital.

(2) *Cancer of the stomach during the second decade* is also extremely rare, Osler and McCrae being only able to collect thirteen. The youngest of these cases is that of Norman Moore. § The patient was a girl, aged 13 years, affected with carcinoma of the cardiac end of the stomach.

The other cases were—one aged 14 years, one aged 15 years, one aged 16 years, four aged 17 years, two aged 19 years, and three aged 20 years. It is into this category that our case will be placed.

Cancer of the stomach in the third decade is more common, and, judging from the figures already given, probably occurs to the extent of 3 to 4 per cent. Osler and McCrae give a record of their own six cases, the youngest of which was 22 years of age.

From the above statement it will be seen that the case above reported falls among the rarities of medicine, so that as a practical question in diagnosis the age of the patient alone was almost enough to exclude the possibility of cancer of the stomach. The possibility on the other hand of meeting with such a case between the ages of twenty and thirty is not so very remote as to justify one in excluding the condition by attaching too much importance to the question of early age. This third group, therefore, is of considerable clinical importance.

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* Osler's 'Principles and Practice of Medicine,' fifth edition, 1903, p. 486.

† *Loc. cit.*, pp. 16–27.

‡ 'Diseases of Children,' by Ashby and Wright, fourth edition, pp. 113–114.

§ 'Trans. Path. Soc. Lond.,' 1885, vol. xxxvi, p. 195.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Ordinary Meeting held Friday, November the 27th, 1908.

Dr. Edmund Cautley *in the Chair.*

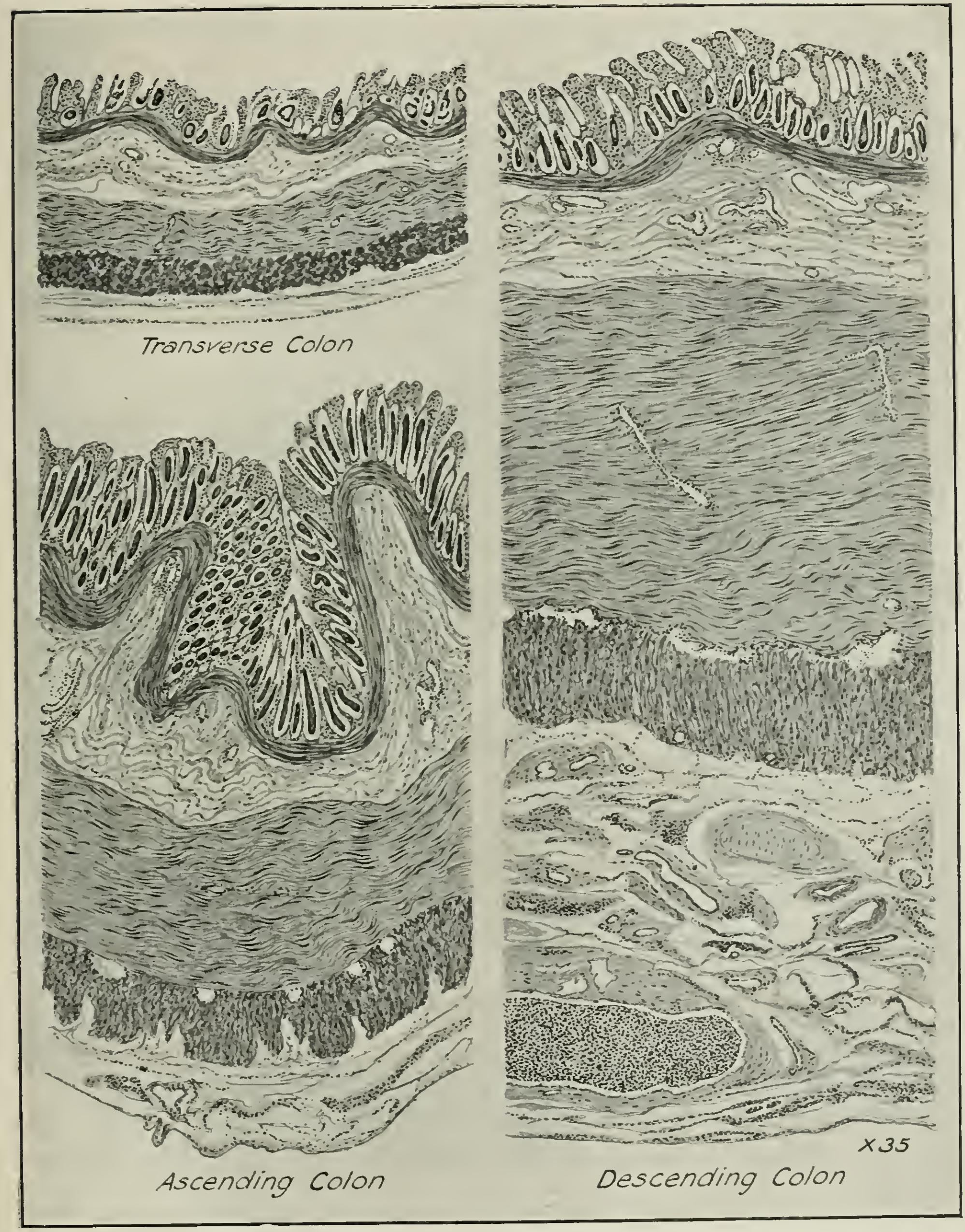
A Specimen of Duodenal Ulcer in a Child, aged 2 months, terminating in Perforation, was exhibited by Dr. Cecil E. Finny.

The Chairman (Dr. Edmund Cautley) said the striking feature was the fact that those ulcers gave rise to pyloric spasm, and that the pylorus was found to be very much constricted after death, and yet there was no evidence of any distinct hypertrophy of the muscle of the pylorus. That favoured the view that pyloric spasm did not cause hypertrophy. He would have liked to hear the author's view as to the causation of those ulcers. They were known to occasionally occur in the new-born, and to follow infection, but in the present case there did not seem to be any clear explanation. Another striking feature was the absence of any definite pain. Occasionally such children were said to suffer from pain in the abdomen, and in consequence to utter whining cries, while applying the hands to the abdomen. One member, he believed, collected the records of a number of cases, taking them as the basis for his M.D. thesis.

Mr. Milner Burgess asked whether there was any suspicion of diphtheria in the case.

Dr. Finny, in reply, said he could not suggest a cause for the ulcers. Apparently the child, from birth, had bile in the stools, and there was a history that the mother experienced a great shock when she was four months pregnant with the baby. The child at times seemed fretful, and apparently it had been sick, but there was not sufficient pain to cause it to cry out much. There was neither sign nor history of anything like diphtheria.

A Specimen of Congenital Dilatation of the Colon from a Child, aged 6 months, was exhibited by Dr. George Carpenter. The infant had been constipated since birth, and when he came under observation he had impacted fæces in the sigmoid flexure and hard fæces projected from his anus. The enlarged colon could be felt throughout its whole extent through the abdominal wall. Apart from the physical condition he appeared

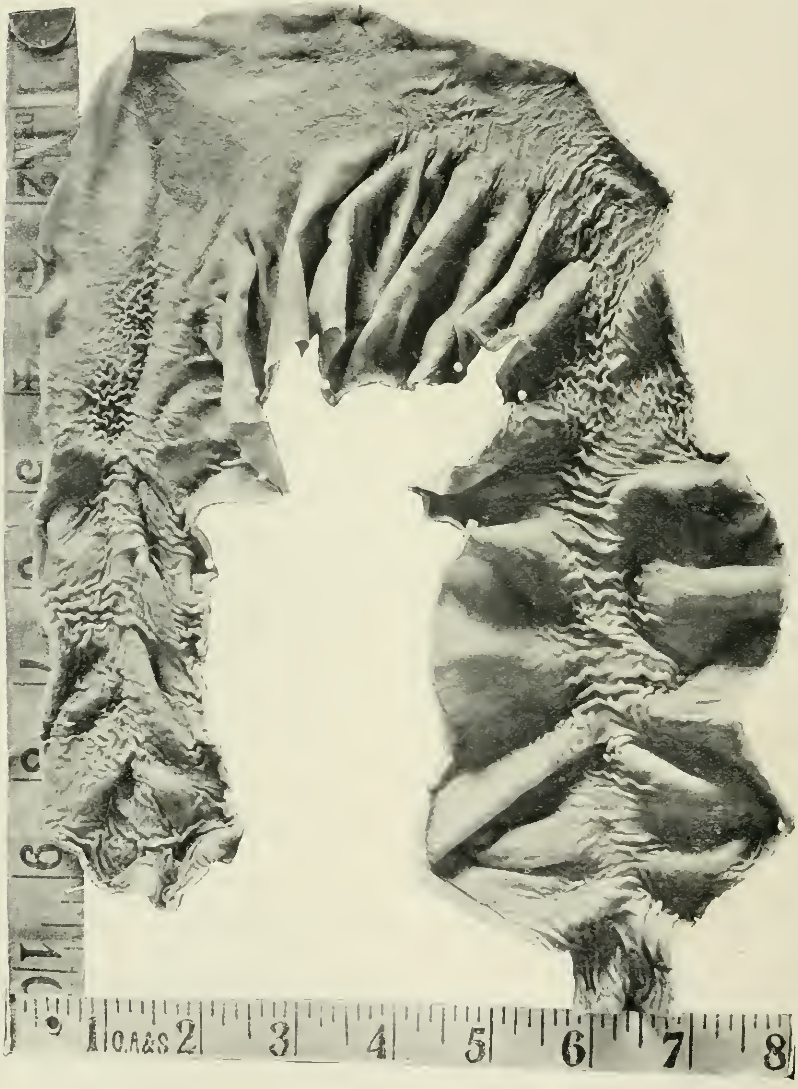


Transverse Colon

Ascending Colon

Descending Colon

to be in fairly good health. He was treated medically by enema, olive oil by the mouth and rectum, and by abdominal massage. But the interesting point about the case was this, that as soon as his symptoms had been



relieved he began to steadily go down hill. He became listless and drowsy. His eyes were sunken and dark-ringed, and he grew thinner and thinner. His skin became sallow, dry and rough. His abdomen was more distended;

peristalsis appeared for the first time about five days after admission and became increasingly pronounced. Coils of distended small intestine could be clearly seen, and the peristalsis seemed more to belong to them than to the easily seen and easily palpable distended colon. He developed a fæcal odour about his cot, and the daily wash-out from his bowel was very offensive. He died on the twenty-first day after admission, excessively wasted, unconscious, and with the abdomen still distended. The specimen exhibited showed the transverse and descending colon to be markedly dilated; the former was thin-walled, the latter thick-walled. All the muscular coats (muscularis mucosæ, transverse and longitudinal fibres) were enlarged. The greatest amount of muscular tissue was in the descending colon in the circular fibres. Next in thickness was the ascending colon, and the transverse colon was comparatively thin with a well-marked musculature however. The mucous membrane was intact. There was no suspicion of a stricture. All his other viscera were healthy.

The Chairman (Dr. Edmund Cautley), discussing Dr. Carpenter's case, said such specimens were peculiarly interesting from the point of view of treatment as well as of diagnosis. He referred to a case under his own care, which also died, that of a child aged 8 weeks. It was born at full time, and there was nothing special in the history. It passed nothing until three days after birth, as a result of injections. It was troubled with constipation, the stools were hard, and it occasionally vomited. When admitted it was pale, anæmic, and very flabby, with a distended abdomen, especially transversely across the upper part. There was no dulness on percussion, and that was not very uncommon in those cases. The stools were dark brown, and of the consistence of wet sand. He treated it in the orthodox way, but it died the second day after admission. At the post-mortem the intestines, especially the transverse colon, were found to be much dilated. The contents of the colon were of the consistence of wet sand; there were no scybala. In addition there was a circular perforation eight inches from the anus, half an inch in diameter, but no peritonitis. He referred to it in contrast to Dr. Carpenter's case. He did not understand whether in the latter it was a congenital dilatation. In this condition there were not usually fæcal masses when it was congenital. He thought it might be secondary to constipation and fæcal obstruction. Many years ago he saw another case in an adult, who had a small warty growth on the mamma, and huge masses in the abdomen. The general opinion of physicians and surgeons in that case was that it was melanotic sarcoma. Subsequently the case was admitted into the London Hospital, where the same diagnosis was arrived at. When the patient died it was found to be congenital dilatation of the colon. He asked whether Dr. Carpenter had considered the possibility of treating such cases by appendicostomy and careful irrigation to allow the colon to contract.

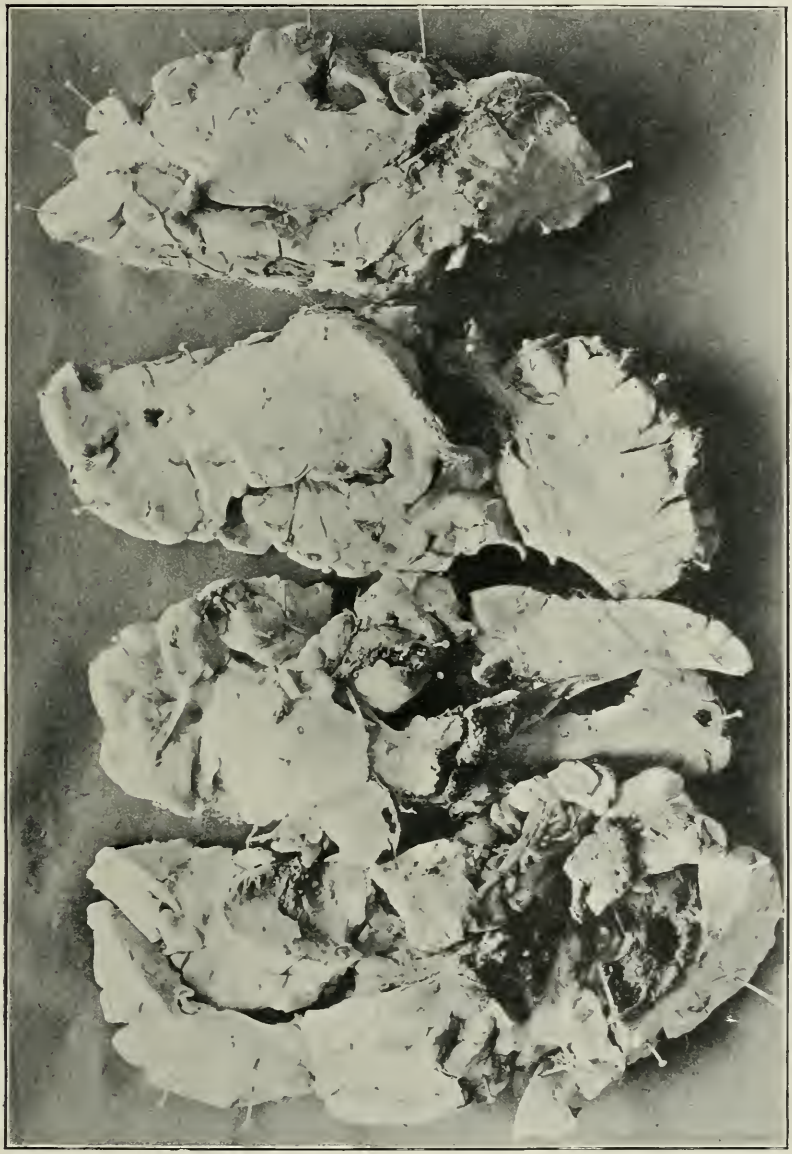
Dr. F. W. Higgs said a child with a similar condition had been under observation at St. George's for eighteen months. The patient was aged 4 years, and the result of treatment such as Dr. Carpenter had described had been, so far, successful. It had been away from the hospital, and had just returned. He thought the prognosis in those cases was generally bad, because of the liability to the presence of stercoral ulcers, which might perforate at any time.

Dr. Parkes Weber asked whether the sections were specially examined for the presence of elastic fibres. Some recent workers on the histology of the subject had found hyperplasia of the elastic tissue, and it was suggested that the hypertrophy of the unstriped muscular tissue was compensatory to hyperplasia of the elastic tissue. He had seen two cases of the condition, not his own, both as old as twelve years, so certainly some of the cases lived a long time, though in those cases there was some doubt whether the condition was congenital or not. The cause of death in one of them was ulcerative colitis. He thought Dr. Cautley made too much of the point that the motions in those cases were not scybalous. When the patients were very bad the motions were fluid, but when they were at their best he thought there were scybala.

Dr. George Carpenter, in reply, said he did not personally attend to the child's bowels, but the resident medical officer reported to him that there were hard fæcal lumps, and his observations could be relied upon. The history showed that the child was constipated from birth; the mother brought the child with that statement. He thought the specimen was generously supplied with areolar tissue, but he was not aware that the yellow elastic tissue was in excess in the case. But further examination of the specimen should be made with special staining. He had only had under his own care two examples of congenital dilatation of the colon. One was operated upon and succumbed. The present one he did not have operated upon, as he thought he would try medical means, and these also had not been successful. Immediately the bowels were cleared out the child steadily became worse and died, apparently from sapræmia. The mucous membrane was intact. He had been asked how such cases should be treated, and he had to confess that he did not know, as his experience had been limited and his results unfortunate.

A Specimen of Congenital Morbus Cordis (Defective Auricular Septum) from a Child, aged 6 months, was exhibited by Dr. George Carpenter. The case was interesting from two points of view, viz. the pathological and the clinical. There was a large perforation about a quarter of an inch in diameter in the posterior part of the septum of the auricles. The anterior part contained the foramen ovale, which was patent to slight extent but efficiently guarded. Other parts of the heart were natural. During life there was a bruit best heard over the second left intercostal space near the sternum. It was heard better on the left side of the chest than the right. It was not audible in the back or in the great vessels of the neck. The child was never blue at any time, although after death, in addition to the cardiac malformation, there was pronounced collapse in the lungs. While in hospital the infant was fretful and nearly always crying and steadily lost weight. The bruit was suggestive of some defect at the pulmonary orifice, possibly a perforated septum ventriculorum, whereas the pulmonary artery and the septum of the ventricles were natural. The ductus arteriosus was closed.

A Case of Congenital Scoliosis was shown by Mr. Duncan Fitzwilliams. The child, a girl, aged 1 year and 4 months, was brought to hospital for curvature of the spine. On examination a slight prominence was to be seen about the dorso-lumbar region, and the spine appeared definitely angled with the convexity to the right, there was no rigidity, but the child could not bend the back laterally as far on the convex as on the concave side. Under the X rays an abnormal vertebra was to be seen between the last dorsal and the first lumbar segments, having a small rib in connection with it on the right side. He believed it to be a survival of part of the hypocordal bone of the first lumbar vertebra; he gave a summary of similar cases of the kind.



A Hæmorrhage into the Lateral Ventricle of the Brain of an Infant, aged 2 months, was shown by Dr. George Carpenter. The infant was admitted into hospital with bronchitis of moderate degree. Cough was but trifling. When it had been in hospital for a few days the temperature began to rise, and ten days afterwards it was found to be 104·6° F. He then had stupor, marked retraction of the head, and opisthotonos, which came on suddenly in the night. The fontanelle was depressed. Lumbar puncture was negative. The fundus oculi was normal. He died ten days after the onset of the symptoms. The cerebral symptoms persisted. There were no clonic convulsions; the legs were stiff and the arms were inclined to be rigid. At the post-mortem examination there was some muco-purulent fluid in the bronchial tubes. The liver was fatty and the spleen congested. The brain was much congested all over but was otherwise normal looking. There was a large hæmorrhage in the left lateral ventricle, which lay at its back part and did not extend into the brain substance. The clot measured 3 cm. by 5 cm., and beyond these limits there was a certain amount of blood staining.

A Case of Ectopia Vesicæ, aged 14 months, treated by Implantation of the Ureters into the Rectum, was shown by Mr. H. M. Rigby. When first seen there was a condition of complete ectopia vesicæ, with epispadias, the testes were undescended, and the urine was constantly trickling from the ureteral orifices. The operation performed was that recommended by Peters, of Toronto. The child can now hold his urine from three to seven hours at a time, and there are no signs of renal infection.

Mr. Hugh Lett said Mr. Rigby was to be much congratulated on the result. The condition was a most distressing one, and he had seen cases in children who had had a number of operations performed in order to re-form the bladder and make a receptacle for the urine. But there was no great improvement on the original condition, as Mr. Rigby had said. Mr. Rigby raised the interesting question as to whether one should implant the ureters into the sigmoid or into the rectum. Only two days ago he heard of a case in which a young child suffered from the same condition. The trigone of the bladder, with the ureters, was implanted into the sigmoid, but the child died twenty-four hours later, and the cause of the obstruction was found to be kinking of the sigmoid, the sigmoid having been rotated. The operation done in this case was infinitely simpler than those performed in some other cases, and the shock was less.

Two Specimens of Congenital Morbis Cordis were shown by Dr. Cautley.

A Case of Enlargement of the Liver and Spleen was shown by Dr. G. A. Sutherland. His diagnosis was cirrhosis of the liver. Mercury had been given.

The Chairman (Dr. Edmund Cautley) said a case like the present one was open to very severe criticism. Of course, the exhibitor had a better opportunity of forming an opinion than had anyone else, but he hoped he would show it again in two or three years time. It was difficult to know whether Dr. Sutherland regarded it as atrophic cirrhosis of the liver or syphilitic cirrhosis. The rapid way in which it had yielded to mercurials suggested the latter, though Dr. Sutherland said there was no evidence of such a taint, and the small size of the spleen was not in favour of syphilis. Another possibility was that the child had had some peritonitis, possibly tuberculous, which had subsided. He hoped the exhibitor would keep the case under observation, and show it or report upon it later. True atrophic cirrhosis was rare in children, and syphilitic cirrhosis was seen at an earlier age than this patient.

Dr. E. I. SPRIGGS said an important point would be as to whether the liver was nodular. When he examined the boy he had already been examined by several, and he would not relax his abdomen; he did not satisfy himself that it was nodular. If it was not nodular, it was not uncommon in a child that age to feel the liver as low down as that. He thought the Chairman's suggestion of tuberculous peritonitis was very much to the point, as in that condition it was not uncommon to find the spleen as large as here. He would be interested to hear whether there was a rise of temperature up to 99·6° F. for a few days. A suggestion that it might be Banti's disease arose, but the patient was not as anæmic as was usual in that complaint.

Dr. G. A. SUTHERLAND, in reply, said he would be happy to show the case again in a few years' time, but his impression was that unless he showed it again this winter he would not have a chance, as he took a very serious view of it. There was no family history of syphilis nor personal evidence of it. The child's mother died from alcoholism about a year ago. The only feature bearing upon syphilis was the rapid improvement under mercury, but in such a case he thought that fact was no evidence of syphilis. He thought it very likely that there was some peri-hepatitis, and that the mercury had benefited that and allowed the circulation to go on. The cirrhosis he referred to was the ordinary atrophic cirrhosis. Naturally he had to exclude tuberculous peritonitis. The patient was suddenly seized with abdominal pain and marked distension of the abdomen. Free fluid was found in the abdomen in a week, but, strangely, there had been no pyrexia: the temperature had been normal all through. It would be different in chronic tuberculous peritonitis. If it was tuberculous it had an acute onset. When the fluid had passed off he examined the abdomen thoroughly, and could find no evidence of a tuberculous lesion in it. The liver was nodular, but, except a little in the left lobe, not enlarged. He had fully expected to hear a reference to Banti's disease, and it was curious how that disease was brought forward in this country. But he had not yet been able to discover what Banti's disease was. Banti was an able physician who first pointed out that a number of cases of splenic anæmia terminated in hepatic cirrhosis. Both those diseases were known about before, though the relationship might not have been detected. He thought it was very unfortunate that the term had come into such common use in this country as a disease.

A Case of Ptosis adiposa (blepharochalasis) in a Child, aged 7 years, was shown by Mr. SYDNEY STEPHENSON. A fold of thin skin marked with a few fine vessels overhanging the free edge of each upper eyelid. The eye-lashes peeped from beneath the overhanging folds. It was impossible to learn from the mother whether the case was congenital. The child also had a cleft of the soft palate.

Dr. SUTHERLAND handed round a photograph of a case of similar nature which he showed years ago at The Society for the Study of Disease in Children. It caused marked deformity, and a few days ago a child was brought up to his out-patient department by a woman who had been operated upon by Mr. Nettleship twenty-five years ago, and she said no benefit followed the operation. As a result of the drooping of the upper lid she developed marked spasm of the occipito-frontalis, giving her a very corrugated forehead. Eventually, by means of very active movements, she was able to see.

A Case of Facial Paralysis in a Child, aged 5 weeks, was shown by Mr. Hugh Lett.

A Case of Muscular Dystrophy of Hypertrophic Form in a Boy, aged 12 years, was shown by Dr. George Carpenter. He had been ailing for some years, and at 6½ years old was sent home from school owing to his inability to get up after he had fallen down. There was no family history of the complaint. A brother was a genetous idiot of moderate grade. The leg, thigh and buttock muscles were much enlarged and hard. He had talipes equinus. He could not stand. The scapular muscles, the deltoids and upper arm muscles were firm. He could only just manage to feed himself. Movements at the elbow were weak, and although he could flex and extend his wrists the hand grasps were very weak. He could not support the weight of his arms. The scapular muscles were enlarged; he could shrug his shoulders. The scapular attachments of the trapezius and the latissimus dorsi muscles were enlarged. The erector spinæ muscles were enlarged and prominent, and he could sit up if placed in the erect position; he could not raise himself to that position. His face was stolid-looking and he appeared a fool, but on the contrary he was not one, being quite bright and sharp. His tongue partially lolled out of his mouth, which gave him that appearance. Fundus oculi normal. Bladder and rectum normal. Knee-jerks absent. Plantar reflexes, flexor response; there was strong contraction in both gastrocnemii on irritation of the soles of the feet. All the muscles of both upper limbs reacted feebly to the faradic current with the exception of both pectorals, which did not react. The reaction of all the muscles was normal to the continuous current. The reactions of the calf and leg muscles were normal to faradism and galvanism, though the reaction to the former was decidedly weak, especially in the anterior tibials and peronei group.

Dr. E. I. Spriggs said cases of pseudo-hypertrophic paralysis were interesting, because the muscular tissue was enormously diminished. During an investigation into a series of cases of muscular diseases he found in pseudo-hypertrophic muscular paralysis, or muscular dystrophy, where there was apparent hypertophy or where there was not, an enormous diminution of creatinin in the urine, namely to one sixth of the normal, and, in the adult, to one third of the normal. Whether creatinin was derived from muscle was a disputed point, but those cases seemed to support that view.

An Infant with Malformations of the Thumbs and Toes was exhibited by Dr. George Carpenter. The thumbs, which contained two terminal phalanges side by side, were broad. One nail divided by a raphe surmounted each. Each forefinger displayed two small depressions on either side, and on the outer a small nail grew. The big toes in appearance suggested thumbs rather than toes, they were so long and monkey-like. Each displayed an extra terminal phalanx; there was an attenuated extra nail over this on each toe. The second toe was longer than normal on each side, but displayed only a very small nail. The palate was large and narrow. The child was otherwise normal. The mother had a tiny nail on each index finger. A brother, aged 6 years, had "divided thumbs, and four toes on one foot and six on the other."

A Case of Congenital Dislocation of the Hip on one side, Coxa Valga on the other, and Rudimentary and Displaced Patellæ was shown by Dr. George Carpenter. The child was aged 7 years, was a breech presentation, and was born with the feet pointing. She had been operated upon for double talipes equinus. The right hip was on the dorsum ilii and there was shortening of $1\frac{1}{2}$ inches. On the left side the shaft of the femur, the neck and the head were in the same line. The gait was waddling. There were no knee-caps proper. These were represented by small sesamoid bones in the recti. The right patella measured 1 in. by 1 in., and its lower border lay almost in the mid-line, $\frac{3}{4}$ in. above the upper border of the tibia with the leg extended. The left measured $1\frac{1}{4}$ in. by $1\frac{1}{4}$ in., and lay out of the mid-line, its inner margin being cut by that line. It was situated 1 inch above the upper border of the tibia. The bony nucleus of the left was seen $\frac{1}{4}$ in. above the epiphysial line, and that of the right was seen opposite that line. The right was all but $\frac{1}{2}$ in. and the left $\frac{3}{8}$ in.

A Case of Acrocephaly, Proptosis, and other Congenital Deformities in an Infant, aged 5 weeks, was exhibited by Dr. George Carpenter. Malformation of the cranial bones was extreme. The orbits were shallow and the eyes protuberant—frog-like. The *frontal* and the *occipital* bones met in the mid-line to form the top of the skull. The combined face and skull looked at from the front was diamond-shaped, the chin forming the dependent angle of the quadrangular figure, the top of the skull its apex. The *parietal* bones were rudimentary—they did not articulate with one another to form the sagittal suture, which was not represented. There was nothing in the shape of an anterior or a posterior fontanelle. The *squamous temporals* were also dwarfed. The *brain* protruded through a large interval comprising the anterior and posterior lateral fontanelles, bounded by the parietal, the occipital, the frontal, and the squamous temporals. There was no pulsation, and an impulse was readily transmitted from side to side. The following were pronounced features, viz. a with difficulty defined zygoma, an enormous occipital protuberance, a broad superior curved line, caving in of the occipital bone below that line, a thrusting forward of the occipital bone, an extraordinarily thrust back frontal bone, a "mountainous" ridge of bone at the junction of the occipital and frontal bones, and a very obvious supra-orbital notch. Other deformities noticed were webbed fingers, six toes on each foot, some of them webbed, an umbilical hernia, and another hernia midway between the umbilicus and the xiphoid cartilage. A family history of deformities of the hands and feet on the maternal side (uncle), which had affected other sisters of the patient, was related. Eight years previously two sisters of the patient were shown to The Society for the Study of Disease in Children with cranial deformities. One of them had *an overhanging frontal bone* and irregular sutures in the parietal bones, and the other had a keeled skull. Both had malformed fingers and toes, and similar defects in their abdominal walls; one had congenital heart disease, and the other a suspicion in that direction. Both these children had died since. One premature child born dead, the mother was told, "resembled these two girls." The parents were exceptionally strong and healthy-looking; they have been married twelve years, and the mother has produced perfectly normal children.

Philadelphia Pediatric Society.

STATED Meeting, November the 10th, 1908, J. P. CROZER GRIFFTH, M.D., President.

Hereditary Syphilis.—Dr. THEODORE LE BOUTILLIER presented three cases, two infants, aged 5 months, and a child, aged 3 years. In the first infant there was a history of coryza with scaling of hands and feet when two weeks old. He now shows depression of bridge of nose, enlargement of all glands, including epitrochlear and sub-occipital glands, and dilated, tortuous and prominent veins of the skull. The two others are brothers. The infant had a typical eruption on head and extremities and mucous patch on tongue. The older child showed a large, square head, enlarged liver and mucous patches on tongue and hard palate. There are also condylomata about the anus; and all glands are enlarged. Dr. le Boutillier also reported the history of a fourth case of late hereditary syphilis, showing gumma in the spinal muscles of the right side at the level of the last dorsal vertebra, and enlargement of the right elbow-joint, which went on to necrosis of the bones and abscess formation. Both conditions improved under treatment, but the boy died later of typhoid fever.

Dr. ALFRED HAND, jun., noted the absence of fissures of the anus in these cases. He has always considered fissures of the mouth of considerable value in making the diagnosis, but the appearance of fissures of the anus is so common in athreptic infants that he hesitates to use anti-syphilitic treatment in the absence of other signs of congenital syphilis.

Dr. A. H. DAVISSON referred to an infant seen first at six months of age, in whom rhagades of the mouth and anus were marked; dactylitis of several fingers was pronounced, and enlargement of the liver was present. Upon calomel and mercurial ointment these symptoms disappeared. In a child, with what was apparently a sprained wrist, whose father was known to have had syphilis and whose mother was under specific treatment during pregnancy, recovery was only brought about when the wrist was placed at rest and specific treatment instituted.

Dr. J. C. GITTINGS said that it was his custom to employ mercurial ointment in cases of infantile atrophy whenever there was even a slight suspicion of syphilis, and that he had never seen any pronounced ill-effects from a therapeutic trial. Daily weighings will quickly demonstrate its benefits, and the failure to gain weight or a continuance of loss after ten days or two weeks' trial would indicate either the non-specific nature of the atrophy or that the luetic infection had produced irremediable somatic injury.

Dr. D. J. HILTON MILLER referred to Jacobi's remarks upon the success achieved by old-time physicians by the use of mercury in wasting infants because so many of the children treated were syphilitic. Dr. Miller said that he had noted fissures about the anus in infants with no suspicion of syphilis. Without the presence of other signs such fissures are not alone evidence of syphilis.

Dr. LE BOUTILLIER said that he considered mercury indicated in all infants in whom fissures of the anus are found, as it can do no harm, and, on the other hand, if the cause of the condition were syphilis, it would do much good.

Impermeable Stricture of the Œsophagus.—Dr. A. P. C. Ashhurst reported the case of a negro boy, aged $2\frac{1}{4}$ years, who had swallowed lye eight weeks before admission to the Children's Hospital. For two weeks he could swallow liquids only. Bougies, even filiform, reached only five inches from the dental margin. Dr. Ashhurst performed Stamm's gastrostomy, the operation lasting forty-five minutes. The child gained in weight regularly, taking food through the gastric tube. Four months later he died of acute pneumonia.

Dr. H. R. Wharton said that he would have practised retrograde catheterisation in this case, but the child was too ill. In another case this procedure had been successful. When the child was seen some years later the gastrostomy wound had healed and the child was taking solid food with apparent comfort. While other methods have been successful, Dr. Wharton prefers retrograde catheterisation in favourable cases. Most of these cases of impermeable stricture of the œsophagus result from swallowing lye.

Strangulated Hernia in Infants.—Dr. Ashhurst reported two cases of strangulated hernia, for which he performed herniotomy. Both were boys, one aged 6 weeks, the other 11 months. Dr. Ashhurst then reviewed the literature of strangulated hernia in infancy most thoroughly.

Dr. J. H. Jopson mentioned a case which he saw a few days before, supposed to be one of strangulated hernia. A baby, aged 5 weeks, with a lump in the left groin, was operated upon by him. The mother stated that the mass had only appeared that morning. Incision showed a suppurating gland, which had certainly been enlarged several days.

Dr. E. B. Hodge said that he had operated on two cases of strangulated hernia in infants. One was a male, aged 6 weeks, operated on at the Children's Hospital. The sac contained only small intestine. This patient died in twenty-four hours. The other was a girl, aged 2 months, operated on in Dr. Willard's service at the Presbyterian Hospital for strangulated hernia of the right tube and ovary, with recovery. This case was reported before the Philadelphia Academy of Surgery, October the 1st, 1906.

Dr. J. P. Crozer Griffith said that among the many causes of vomiting in infancy we must remember the possibility of a strangulated hernia being present. It was strange that, with the great number of cases of hernia in infants, strangulation was not seen more frequently. Unless an examination of the whole body is made such cases may easily lead to error. He recalled the case of an infant in the early months of life, brought to the Children's Ward of the University of Pensylvania, who was apparently suffering from acute gastritis. The fact that hernia had been present for some time was not mentioned by the mother, but the routine examination showed that the symptoms depended upon strangulation. Operation was performed successfully.

Imperforate Rectum and Anus.—Dr. J. H. McKee reported three cases of imperforate rectum and anus.

Dr. Jopson had operated upon two of these cases.

Dr. Wharton said that he had seen a large number of these cases. The most favourable are those with atresia of the anus or of the lower end of the rectum. Next come the cases of recto-vaginal fistula. In the latter, if bowel movements pass freely through the recto-vaginal fistula operative treatment may be deferred for some time. Later the rectum may be exposed and opened through the perinæum, or the Italian operation may be done. The most unfavourable cases are those in which the rectum terminates in the bladder or urethra. In such cases Dr. Wharton prefers iliac colostomy. Of all operations for imperforate rectum and anus Dr. Wharton considers the perinæal operation the best.

A Study of the Blood in Pertussis.—Dr. J. A. Kolmer read this paper by invitation. He had studied the blood in over one hundred children, twenty-seven of them having pertussis. His object was to determine a working standard for the total number of leucocytes and the proportions of the leucocytic elements in the blood of institutional children of various ages; to ascertain if it were possible to diagnose pertussis with some degree of certainty, early in its course and in typical cases, by a study of the blood; to study the blood in conditions resembling the catarrhal stage of pertussis (bronchitis and laryngitis), to ascertain whether the blood changes peculiar to pertussis occur in them also; and to study the blood in cases of pertussis modified by complications.

Dr. Kolmer first studied the blood of 70 apparently well institutional children, 10 between three and twelve months; 10 between one and two years; 25 between two and three years, and 25 between three and a half and five years. He concluded that the percentage of leucocytes does not change materially with age up to five years; that the percentage of lymphocytes, both small and large, decreases as age advances. The percentage of lymphocytes is higher in institutional than in other children. Finally, that a fair percentage of basophiles was found.

The twenty-seven cases of pertussis were followed from beginning to end. Examinations were made in the pre-catarrhal, catarrhal, paroxysmal, marked improvement stages and two months after the paroxysmal stage. The following changes were found in the blood: (1) There is a slight leucocytosis and absolute increased percentage of all forms, even in the pre-catarrhal stage. The number of leucocytes steadily increases in the catarrhal stage, reaches the climax in the paroxysmal stage, and then falls by lysis. (2) The lymphocytes follow a similar course. A lymphocytosis may not always be appreciated in the pre-catarrhal stage, but certainly will be found in the catarrhal stage in the great majority of cases. This lymphocytosis reaches its climax in the paroxysmal stage and then gradually falls. The increased percentage of lymphocytes is absolute, and not relatively, as is frequently found in rickets. (3) The large lymphocytes run a more irregular course. In most cases a large percentage was found when the number of small lymphocytes was high. It will be noted that their percentage usually remains high for a time after the small lymphocytes begin to decrease. (4) The transitionals run a very irregular and unimportant course. (5) The percentage of polymorphonuclear neutrophiles is, in most instances, actually increased, but relatively they decrease as the lymphocytes go up. It is interesting to note how this relationship is changed in the complications of pertussis, notably lobar pneumonia and in secondary infections. (6) The eosinophiles run a more typical course. During the catarrhal stage they are usually present in normal proportions, are relatively decreased in the paroxysmal stage, and in the post-paroxysmal stage a mild eosinophilia sets in. (7) The basophiles begin to increase in the catarrhal stage, and the percentage remains higher than normal throughout the disease. (8) Many bi-lobate and "basket" cells were found, especially in the presence of a high lymphocytosis. No myelocytes were seen.

The blood was examined in seven cases of bronchitis, one of laryngitis and twenty-one cases of cough. Few changes were found, a slight leucocytosis and a slight rise in the percentage of eosinophiles with an appreciably increased percentage of mast-cells. A study of the complications was interesting. In a case complicated by broncho-pneumonia the lymphocytes were actually increased, while in one complicated by lobar pneumonia the lymphocytes were both relatively and absolutely decreased, while the polymorphonuclear neutrophiles were increased. The case complicated by Vincent's angina showed a high leucocytosis, as did cases with impetigo and ecthyma.

Dr. Kolmer concluded that there is certainly present early in pertussis a leucocytosis, which affects mainly the small lymphocytes, and that these changes are characteristic, serving in a great many cases to diagnose pertussis before such diagnosis can be made from the clinical symptoms. In many instances a provisional diagnosis should be made, and re-examination of the blood later will clear up all doubt. While the method may consume too much time for the general practitioner, it will be of great value in institutions, to prevent the spread of an epidemic of whooping-cough.

Dr. C. A. FIFE said that Dr. Kolmer's work, which had extended over months, was inspired by Dr. Cruice. The value of these results is undoubted, and Dr. Kolmer's investigations are more extensive than any studies so far published upon this subject.

Dr. J. M. CRUICE said that he had read Dr. Baruch's paper, which suggested further work on the subject. As there was an epidemic of pertussis at St. Vincent's Home, he asked Dr. Kolmer to undertake the investigations. By making an early diagnosis from the blood examinations cases were isolated early and the epidemic was soon under control.

Dr. MILLER asked whether Dr. Kolmer could tell how soon after an attack of pertussis the blood-count became normal; also whether any of the children communicated the disease when the blood-count was still above normal. He asked this question because it had occurred to him that the blood-count might be proved to be a valuable aid in settling the much discussed question, viz. How long is pertussis communicable?

Dr. Kolmer said that Baruch found that the blood-count became normal three and a half months after the attack of pertussis. But in his experience no cases of infection from cases discharged after two months had occurred. Comparatively few investigations have been attempted on this subject.

Société de Pediatrie, Paris.

October the 20th, 1908 (*Bulletin No.* 7).

Congenital Rickets.—Messieurs MÉRY and PASTURIER showed a child, aged about 6 weeks, having well-marked rachitic symptoms. The skull showed frontal and parietal bosses, and was well developed; the radial epiphyses were thickened, the bones of the forearm curved, the limbs under-developed; there was a well-marked costal "rosary" and deep groove, the abdomen was distended, and the lower limbs incurved and thick.

The infant's facial expression resembled that of congenital syphilis, but further examination negatived this idea. Radioscopy revealed marked thickening of the bones of the arm. Although the existence of congenital rickets has been denied, the authors do not consider that their case should be classed among the achondroplasias on account of the micromelia alone.

Mons. MARFAN said he had noticed achondroplasics in whom lesions of rickets existed, and which disappeared after five years of age, whereas achondroplasic lesions increase. He considered craniotabes the chief symptom of congenital rickets, and showed several skulls affected by it to prove his assertion.

Treatment of Whooping-cough by Subcutaneous Injections of Morphia.—H. TRIBOULET and G. BOYÉ, following the practice of Lesage, who uses morphine to relieve the spasms of croup, had recourse to this drug when the attacks of whooping-cough were marked. The doses employed were those suggested by Lesage—¼ cgr. below the age of one year, ½ cgr. above one year. Under its influence the number and intensity of the attacks sensibly diminished, and the child experienced no other inconvenience but slight drowsiness for a couple of hours. These doses were repeated daily for three days, and then omitted for three days, and again resumed if the number of attacks tended to increase. All the children, including a nursling of three months, tolerated the morphia well, the vomiting caused by the attacks ceased, and appetite returned; in fact, the results were far more satisfactory than those obtained by any other treatment. The authors advocated this treatment, which was successful in twenty cases of simple whooping-cough, but did not advise it in complicated cases.

Mons. VARIOT said he would not repeat the objections and strong criticisms against morphine made by the late Mons. Sevestre twelve years ago, when it was proposed to combat spasm of the glottis in croup and laryngitis by the use of codeine. Sevestre realised later on the exaggeration of his fears against this alkaloid, which is so well tolerated by children. The use of morphine by Lesage and Triboulet is a step in the same direction, but it is an alkaloid of much greater toxicity than codeine, especially in childhood, and it is not without justification that therapeutists, such as Jules Simon, prescribe these alkaloids with extreme caution. Very recently M. le Blaye stated that he had seen a child of five die, who was suffering from an attack of diphtheria of moderate intensity without threatening symptoms, after an injection of ½ cgr. of morphine. The little patient became collapsed immediately after the puncture, with cold extremities and thready pulse, and whatever doubt may be thrown on the cause of death it shows that the effects of morphine in analogous circumstances should be observed with the greatest care. In recording the good effect of morphia in moderating the attacks of whooping-cough, its possible inconvenience must not be lost sight of, and beneficial effects follow the use of other drugs, such as grindelia, bromoform, antipyrin and belladonna, long ago recommended by Trousseau. Since many attacks of whooping-cough are very slight and the cough moderate and infrequent, he thought the use of morphia should be reserved for serious cases, especially those in which ordinary remedies have failed, and would himself hesitate to adopt the method as a routine.

Sclerema localised in one Lower Extremity with Arrest of Cerebral Development.—P. BOULLOCHE showed this case—a boy, aged 4½ years, who from birth had a hard, œdematous swelling of the left lower extremity, which was not painful, but prevented free movement of flexion of the leg or the thigh. There was in addition slight atrophy of the whole limb. On the abdomen the infiltration gave the impression of fibrolipomatous masses. The child's intelligence was profoundly affected and there was mental weakness which was daily increasing. Thyroid treatment was seemingly without effect.

A Method of Preserving the Bodily Heat of Premature and Weakly Infants by Wrapping in Waterproof Cloth.—H. Dufour recommended this method, which is very simple, and consists in wrapping the new-born infant, over its clothes, with two layers of waterproof cloth (taffetas gommé). This impermeable tissue hinders the conduction of heat and aids in raising the temperature of the feeble patient to 32° C., who remains in this wrapping twenty-four, or, at least, twelve hours, according to his temperature, which sometimes rises slightly above normal. This method does away with the necessity of incubators, which have many disadvantages, *i. e.* their price, their badly contrived method of heating and the bad results obtained from their use.

Mons. Variot said that he did not share the opinion of his colleague with regard to incubators heated with hot water. Those he had in use at the crêche, where a large number of weakly infants were reared, were free from all those disadvantages. Flat hot-water receptacles, made of metal and tightly closed, were slipped under the box in which the infant lay. Even if they did burst the water cannot burn the infant. He thought they had been modified by Professor Hutinel, but at any rate they served to keep up a regular temperature of 28° to 30° C., which was necessary for these infants. Wrapping with impermeable tissue, if it could not replace the incubator, was not without utility, especially in the country where such apparatus could not be easily obtained, and it had the advantage of being certainly more economical.

Foreign Body in the Air-passages coughed up after fifteen days.—N. Coldenstein showed a whistle swallowed by a boy, aged 10 years, in whom it had produced no sign of dyspnœa. On auscultation a whistling noise was easily heard, which was replaced by a rhonchus the next day after administration of an emetic which had displaced the foreign body. Radioscopy gave negative results. The interest of the case lies in the complete absence of dyspnœa, etc., due to a foreign body in the lungs, which was coughed up after remaining there fifteen days. Vincent Dickinson.

Abstracts from Current Literature.

Medicine.

Erythromelalgia in infancy (*'La Pediatria,' March*, 1908, *p.* 196).—**N. Serio-Basile.**—Cases of this disease hitherto recorded have almost all occurred in adults of the male sex and the lower limbs have been chiefly attacked. Weir-Mitchell's disease is extremely rare in infancy. Baginsky, in 1902, recorded a case in a child aged 10 years. The author's case was a female, aged 5 years; the illness commenced suddenly with pain in the fingers of the left hand extending to the præcordial region, the painful parts became of a mottled deep red colour, swollen and hot. The attacks were repeated three or four times in twenty-four hours and lasted four to five minutes, and were accompanied with tachycardia. Cure was obtained in three weeks by application of cold compresses. VINCENT DICKINSON.

Intolerance of mother's milk from excess of fat in the milk (*'La Pediatria,' March*, 1908, *p.* 203).—**Jole del Boudio** reports this case in a female infant, aged 3 months, who was robust and healthy, nursed by a healthy mother, and became ill at the end of the second month without apparent cause, with very severe dyspepsia leading to atrophy and wasting. Examination of the milk showed a marked increase of fat, 44 per cent. to 71 per cent. Cure was effected by giving skimmed cow's milk.

VINCENT DICKINSON.

Surgery.

A case of tuberculosis of the mesenteric glands, with ulceration into the superior mesenteric artery (*'Lancet,' July* 18, 1908).—**A. W. T. Whitworth** describes the case of a child, aged 7 years, who was admitted to the Guest Hospital, Dudley, on March 29. He had complained for some time of colicky pain in the abdomen. The boy was tuberculous-looking and an imbecile. There was an offensive discharge from the right ear. The abdomen was not distended, and moved on respiration. The walls were rigid on palpation. A sense of increased resistance was present in the left lumbar and the left hypochondriac regions. There were no signs of free fluid in the abdominal cavity, and the liver was not enlarged. There was slight dulness in the left lumbar region. No vomiting occurred. A diagnosis of localised tuberculous peritonitis was made with (?) temporo-sphenoidal abscess. The general condition of the patient improved under constitutional treatment and the local application of Scott's dressing. There was never any diarrhœa. He continued, however, to have attacks of abdominal pains On April 2 he was suddenly seized with violent pain in the abdomen and he became rapidly collapsed. The head became retracted and the back arched. This way maintained for half a minute when the patient suddenly relaxed and died. During the relaxation immediately preceding death adherent coils of bowel could be felt in the left lumbar region. On opening the abdomen a considerable quantity of clear fluid escaped, and a large amount of blood-clot was found in the general peritoneal cavity. In the left lumbar region the coils of intestine were found matted together. On separating the adhesions the mesenteric glands were discovered to be enlarged, some being hard and caseous, while others were breaking down. Round one of the latter the ulcerative process had spread beyond the gland to the adjoining mesentery, and had eroded a large branch of the superior mesenteric artery, the hæmorrhage from which was the cause of the patient's death. All the other abdominal organs were normal, and the intestines showed no sign of tuberculous ulceration. The brain was normal, except that the convolutions were poorly developed, and there was no sign of cerebral abscess. The interesting features of this case were the remarkable paucity of symptoms pointing to the precise nature of the condition and the unusual termination of the case. JAMES BURNET (Edinburgh).

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